



I'll bet real money you can learn to play — this easy fascinating way

YES, I mean actually play real music—classical numbers or jazz—so that you'll be able to entertain your friends—to be popular everywhere.

And what's more, you won't need a private teacher. You'll learn all by yourself—right in your own home. And best of all the cost is only a small fraction of what it used to cost by old-fashioned methods.

Why am I so sure? Simply because more than 600,000 other men and women, boys and girls—no more clever—no more gifted than you—have learned to play by this modern system.

No Special Talent Required

Learning to play this U. S. School of Music way is easy as A-B-C. No special talent is required—no previous musical training. If you can whistle a tune you can learn to play by this simple method—quicker than you ever dreamed possible. There's nothing tricky about it—no complicated theories—

nothing to memorize. You learn to play from real notes—the same as those used by accomplished musicians.

And with this shortcut system you don't have to spend hours practicing tedious scales or monotonous finger exercises. Instead you have the fun of playing real tunes—right from the very beginning. And almost before you realize it you are able to pick up any piece of music and play it.

Clear as Crystal

The best part of it all is that it is so simple—so crystal clear—so easy to understand. It's all right before you in print and pictures. First you are told how to do a thing. Then a picture shows you how to do it. Then you actually do it yourself and hear it. It's fascinating fun, too—practicing becomes a real interesting pastime instead of a wearisome task.

Free Demonstration Lesson

So that you may see for yourself how easy, how pleasant it is to learn by this modern, simplified method, the U. S. School of Music

has prepared an Illustrated Booklet and typical Demonstration Lesson which are yours for the asking. They explain fully the principles of this remarkable method and how it enables you to become a popular musician in a surprisingly short time, at a cost of only a few cents a day.

If you are really serious about wanting to learn music—if you honestly want to become popular—to have the pleasure of entertaining your friends—take this first step today—send for this Free Booklet and Free Demonstration Lesson. Don't put it off. Mail the coupon below and they will be sent to you promptly. No obligation. U. S. School of Music, 3594 Brunswick Building, New York City.

U. S. SCHOOL OF MUSIC 3594 Brunswick Bldg., New York City

Please send me your free book, "How You Can Master Music in Your Own Home," with inspiring message by Dr. Frank Crane. Free Demonstration Lesson and particulars of your easy payment plan. I am interested in the following course:

Have You Instrument?
Name
Address
City State

PICK YOUR INSTRUMENT

Piano	Violin
Organ	Clarinet
Ukulele	Flute
Cornet	Saxophone
Trombone	Harp
Piccolo	Mandolin
Guitar	Cello
Hawaiian Steel Guitar	
Sight Singing	
Piano Accordion	
Italian and German Accordion	
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Automatic Finger Control	
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Junior's Piano Course	

May, 1934

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ASTOUNDING

STORIES

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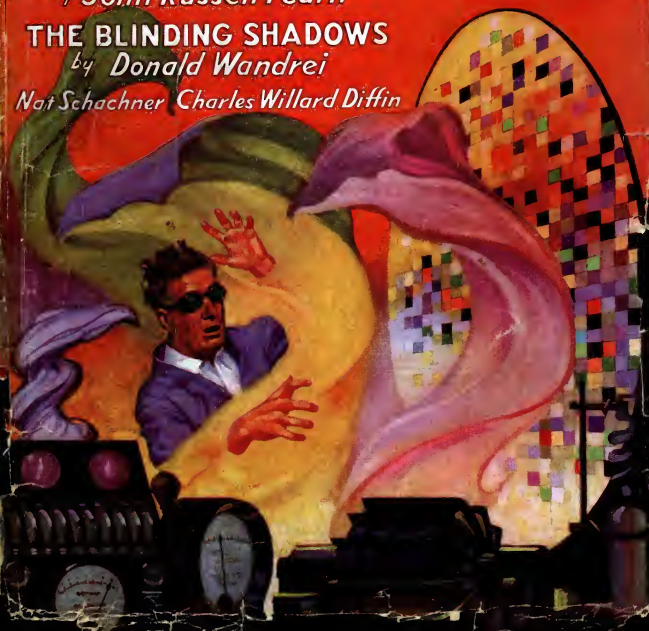
THE BRAIN OF LIGHT

by John Russell Fearn

THE BLINDING SHADOWS

by Donald Wandrei

Nat Schachner Charles Willard Diffin





"MY OWN CODE GAVE ME

this raise"

"A LITTLE over a year ago I adopted a code covering my spare time. I decided to systematically devote a portion of it to improving my training, in the thought up-to-date knowledge is an ace in the hole. My hunch was right! That International Correspondence Schools course is directly responsible for this raise. And the way the boss talked, another one is not so far away."

There is no reason why you shouldn't turn your own spare time into real money. The man who makes real money has *real* training. I. C. S. can give you *real* training! The coupon will bring you valuable information—*free*.



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"The Universal University"

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Without cost or obligation, please send me a copy of your booklet, "Who Wins and Why," and full particulars about the subject *before* which I have marked X:



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Name.....Age.....Address.....

City.....State.....Occupation.....

If you reside in Canada, send this coupon to the International Correspondence Schools Canadian, Limited, Montreal, Canada

On Sale Third Wednesday of Each Month

VOLUME XIII
NUMBER 3

ASTOUNDING STORIES

MAY
1934

A STREET & SMITH PUBLICATION

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and we will tell you how YOU can qualify to—

Win \$2,250.00
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HERE'S a lot of cash for some one. Would you like to have it? I am going to give it away. We want to advertise our business quickly and get wide distribution for our products. Someone, maybe you, will receive new Buick Sedan and \$1,250.00 cash extra for promptness or if you win 1st prize and prefer all cash you get \$2,250.00. Duplicate prizes paid in case of ties.

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This is our unique way of advertising. We want people everywhere to know us and to share in this great distribution

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Can You Find 5 Faces?

It is fun to look for the hidden faces in the trees, clouds, etc., in the picture at the right. Are your eyes sharp enough to find them? Some look straight at you, some are upside down—others are sideways. It is not as easy as some people may think, but don't give up—keep looking and you may find them. When you do, mark them and send your answer right away. Quick!

Many people have received big cash prizes from companies with whom I have been associated. Some have received several thousand dollars. Names gladly furnished on request. Answer today and see for yourself if you can win the first prize. Oh Boy! what you could do with \$2,250.00 all in cash at one time. I will be glad to pay it to you if you are adjudged the winner.

Hurry—mark the 5 faces you find, send your answer quick. You may be the one to receive the \$2,250.00 prize.



Send No Money, Just Mail Coupon

FOR
Promptness
\$1,250.00
EXTRA
or a total of \$2,250
if you are prompt
and win 1st prize.

Remember, send not one penny with this coupon—all you do now is to find 5 faces, if you can, and mail the coupon. We will answer you right away and tell you how you stand.

The money to pay every prize is on deposit in a big strong Des Moines bank. Get your share of \$4,305.00 in cash prizes, besides thousands of dollars in Special Cash Rewards. Sixty grand prizes in all. All prizes will be paid promptly. Hurry! Just mark the faces you find and send with coupon right away. Some one wins—maybe you. Send your answer and see for yourself if you win first prize. **DON'T DELAY! ... Mail your answer today.**

G. F. STAYTON, President Dept. 50
1912 Grand Avenue,
Des Moines, Iowa.

I have found 5 faces in the enclosed picture and I want to win. Tell me how I stand.

My name.....

Address.....

City.....State.....

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30x34-50-21	2.40	0.85	28x35-40-19	3.35	1.15
28x34-75-19	2.45	0.95	29x35-50-19	3.35	1.15
29x34-75-20	2.50	0.95	30x35-50-19	3.40	1.15
29x35-00-19	2.55	1.05	31x35-50-19	3.40	1.15
30x35-00-20	2.55	1.05	32x35-00-20	3.40	1.15
28x35-25-19	2.90	1.15	32x35-00-21	3.65	1.25
29x35-25-19	2.95	1.15	32x35-50-20	3.75	1.35

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Size	Three Tubes	Size	Three Tubes
30x32	\$2.25	30x35	\$3.35
30x33 1/2	2.35	31x34 1/2	3.45
31x34	2.95	31x35 1/2	3.45
32x34	2.95	32x35	3.45
33x34	2.95	33x35	3.75
34x34	3.25	35x35	3.95

HEAVY DUTY TRUCK TIRES

Size	Three Tubes	Size	Three Tubes
30x35 Truck	\$4.25	\$1.95	
34x35 Truck	5.25	2.45	
32x36 5 ply. Truck	6.95	2.75	
32x36 10 ply. Truck	7.95	2.75	
36x35 Truck	8.95	3.95	
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40x35 Truck	13.25	4.15	

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Address.....



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MONEY FOR YOU AT ONCE

My amazing new Tea and Coffee Route Plans provide for your having immediate cash earnings. If you are honest and reliable and willing to take good care of the customers on one of these Routes, then you are just the person I am looking for. You will start in your own locality, right near where you live. There is nothing

hard or difficult about the work. There will be no red tape connected with getting started. You won't have to rent a store, buy fixtures, or other high priced equipment to start with.

I FURNISH EVERYTHING

Just as soon as I hear from you I will send you complete details of the inside workings of this nation-wide Tea and Coffee Route Plan that is taking the country by storm. I will explain just how you go about handling the business. The plans I give you cost me thousands upon thousands of dollars and years of time to prepare. They are time-tried and proven. They have brought quick money relief to hundreds and thousands. Why not to you?

LOOK AT THESE UNUSUAL EARNINGS

My Tea and Coffee Plans are not an experiment. If you have been working part time or for low wages, this is your opportunity to get more cash immediately—money to pay your bills and live well. Here's what some

have already done: Wm. B. Berkheimer, Pa. cleared \$20.00 in one day and as high as \$90.00 in one week. Sanford Berg, Ind. \$45.00 in one week. Wm. B. Newcomb, N. Y., \$24.00 in one day, \$90.00 in one week. G. V. Sinclair, Texas, jumped his income from \$20.00 a week to \$65.00 in a week. These exceptional earnings show the amazing possibilities of the offer I am now making to you. Better send me your name today and find out the great possibilities of my offer.

SEND NO MONEY—JUST NAME

Don't send me a cent. Just rush me your name so I can lay all the facts before you and then you can decide for yourself. My plans are complete. I send you absolutely free the details of my offer. I even furnish brand-new Ford Tudor Sedans to producers as an extra bonus. Send name on coupon or money postcard. Costs nothing. Do it today.

SPECIAL OPENINGS FOR WOMEN

I have wonderful reports of the success women are having handling Neighborhood Tea and Coffee Routes. Even in their spare time they make as high as \$50.00 a day. The work is light and pleasant. Mrs. Carrie McCalmant, Neb., had earnings of \$50.00 in a week, despite a sick husband and two children to take care of. Mrs. Jewel Hackett, here in Ohio, decided to try the business and she made \$33.00 in seven hours. These are a few of the hundreds of exceptional earnings reported, showing what can be done with my plan.

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ALBERT MILLS, President
5042 Monmouth Ave., Cincinnati, Ohio

Here's my name. Rush me free particulars of your exceptional Tea and Coffee Route Plan, showing just how I can get started on a basis of up to \$99.00. I understand there is no obligation on my part.

Name

Address

(Please Print or Write Plainly)



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28x4-40-2	2.55	.35	28x4-40-2	2.55	.35
28x4-40-3	2.40	.40	28x4-40-3	2.55	.35
28x4-40-4	2.40	.40	28x4-40-4	2.55	.35
28x4-40-5	2.40	.40	28x4-40-5	2.55	.35
28x4-40-6	2.40	.40	28x4-40-6	2.55	.35
28x4-40-7	2.40	.40	28x4-40-7	2.55	.35
28x4-40-8	2.40	.40	28x4-40-8	2.55	.35
28x4-40-9	2.40	.40	28x4-40-9	2.55	.35
28x4-40-10	2.40	.40	28x4-40-10	2.55	.35
28x4-40-11	2.40	.40	28x4-40-11	2.55	.35
28x4-40-12	2.40	.40	28x4-40-12	2.55	.35
28x4-40-13	2.40	.40	28x4-40-13	2.55	.35
28x4-40-14	2.40	.40	28x4-40-14	2.55	.35
28x4-40-15	2.40	.40	28x4-40-15	2.55	.35
28x4-40-16	2.40	.40	28x4-40-16	2.55	.35
28x4-40-17	2.40	.40	28x4-40-17	2.55	.35
28x4-40-18	2.40	.40	28x4-40-18	2.55	.35
28x4-40-19	2.40	.40	28x4-40-19	2.55	.35
28x4-40-20	2.40	.40	28x4-40-20	2.55	.35
28x4-40-21	2.40	.40	28x4-40-21	2.55	.35
28x4-40-22	2.40	.40	28x4-40-22	2.55	.35
28x4-40-23	2.40	.40	28x4-40-23	2.55	.35
28x4-40-24	2.40	.40	28x4-40-24	2.55	.35
28x4-40-25	2.40	.40	28x4-40-25	2.55	.35
28x4-40-26	2.40	.40	28x4-40-26	2.55	.35
28x4-40-27	2.40	.40	28x4-40-27	2.55	.35
28x4-40-28	2.40	.40	28x4-40-28	2.55	.35
28x4-40-29	2.40	.40	28x4-40-29	2.55	.35
28x4-40-30	2.40	.40	28x4-40-30	2.55	.35

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*"They, and the mirror, were absolutely
blinding—like incandescent fire—"*

*Illustrated by
Howard V. Brown*

Blinding Shadows

An experiment destroys a fundamental law—and makes man's mightiest city a place accursed. A Thought-variant

by DONALD WANDREI

PASSING NOW from the ten-year period of reconstruction that salvaged what was left of civilization after the second World War in 1955-58, we come to the year 1970, and the phenomenon generally called "The Blinding Shadows." It is not easy to approach this topic, deserving though it is of a volume in itself, for much that brought it on, and indeed its very nature, is still and likely always to remain a riddle.

The area involved roughly comprises what was formerly known as Greater New York, and includes a circle whose radius is some ten miles, even extending out into the harbor and the Atlantic. This area, now protected on land by great cement, steel, and barbed-wire fortifications erected by the government, is dead ground, which tens of thousands of sight-seers visit weekly to view the "lost" city and its strange conquerors, the Blinding Shadows.

One may stand upon the western wall, atop the Jersey Palisades, and look through barbed wire at a deserted city, where a vast and immeasurable fortune in gold, jewels, merchandise of every description, real estate, art treasures, libraries, museums, and the very cream of man's wealth, lies forever beyond human hands. No ship has sailed into New York harbor in ten years, nor has even dared try to break the

pontoon barrier that curves beyond Staten and Ellis Islands, southwest to the Jersey coast, and northwest to Long Island.

It is a matter of cosmic irony that New York, the dream city that withstood war and all the natural forces of destruction, has fallen before a mysterious, extra-natural enemy who remains unidentified. It may be that the scientists who have labored for a decade will eventually solve the puzzle and liberate New York, but in this year of 1980, the solution seems as far off as ever.

The Blinding Shadows first appeared on May 9, 1970.

As nearly as has been ascertained, however, their origin dates back to May 27, 1969. Upon that afternoon, Professor G. M. Dowdson of the University of Minnegon delivered a paper which created a sensation among learned societies. Dowdson was professor of mathematics, and also held degrees qualifying him as a doctor of optics and of philosophy.

Born in 1920, an infant prodigy, he received his B. A. at fifteen, his M. A. at sixteen, and his Ph. D. at eighteen. He achieved international fame for his researches into optical laws and the invention of lenses which made possible the great Mount Everest observatory, built in 1950. He taught mathematics, evidently pursuing his researches in

private, until he read his celebrated paper.

The occasion was the meeting of the International Scientific Academy at the University of Minnegon. On the afternoon of the second day of the session his paper was presented. One may imagine the professor, a short, nervous, dyspeptic man of keen eyes and extraordinary energy, striding back and forth upon the rostrum while he electrified a gathering that in its small compass of three hundred delegates included the greatest investigators of the time, men who were outstanding in every field of science. Dowdson's paper is too long to be quoted in full, but excerpts are interesting not only in themselves, but for the light they shed upon the Blinding Shadows.

SHORTLY AFTER his opening remarks, Dowdson stated: "One by one, our fundamental laws have been challenged as the boundaries of our knowledge have expanded. Among the few remaining was the ancient axiom: Two solids cannot occupy the same space at the same time. Gentlemen, that axiom is a fallacy. Two bodies *can* occupy the same space at the same time. The experiments of Rutherford, Bohr, Ellingsen, and others, proved that so-called solids were actually composed of atoms with spaces between the constituent particles as great comparatively as those between the stars of our galaxy.

"What is to prevent another solid, but with its constituent particles in these gaps, from occupying the same space at the same time? What is to prevent many apparent solids from occupying the same space simultaneously?

"The skeptic will retort, if two or more bodies can occupy the same

space at the same time, why do we not perceive them? My answer is, we cannot perceive them because we have insufficient senses, because they are beyond our range of perceptions, or because they lie in a separate world.

"Gentlemen, there was a time long ago when objects were considered to have two dimensions, namely, length and breadth. After Euclid, it was discovered that length, breadth, and thickness comprised three dimensions. For thousands of years, man could visualize only two dimensions, at right angles to each other. He was wrong. Now, for more thousands of years, man has been able to visualize only three dimensions, at right angles to each other. May there not be a fourth dimension, perhaps at right angles to these, in some fashion that we cannot yet picture, or perhaps lying altogether beyond our range of vision? Objects emitting infra-red rays, and lying in such a four-dimensional world, might easily be past our ability to see and our capacity to understand, while existing beside us, nay, in this very hall."

Professor Bonnard was seen to turn red at this point, though he listened with polite deference. He had mathematically proved in the preceding session that no other than a three-dimensional universe was tenable.

Dowdson reached the crux of his paper with deep, if skeptical attention from his audience: "A three-dimensional object casts a two-dimensional shadow. If such a thing as a two-dimensional object existed, doubtless it would throw a one-dimensional shadow. And should a four-dimensional solid be extant, its shadow would be three-dimensional. In other words, gentlemen, it is entirely conceivable that in our very

midst lies a four-dimensional world whose shadow, of itself, or could we construct a mirror to reflect or materialize it, would be characterized by three dimensions, though we might never have eyes to see or minds to understand the nature of the four-dimensional origin of that shadow."

Later in his paper, Dowdson stated: "You may well ask why, if my theories are correct, no such shadow has ever been seen. The answer, I think, is fairly simple. Subject to laws alien to those we know, and imperceptible to our range of vision, it is quite probable that the object *does* cast such a shadow, but of such a color as to be also invisible. The alternative theory is that some intermediary, such as a mirror based upon radical principles, would reflect the shadow.

"One of my assistants is now working with infra-red photography. He may some day succeed in proving my theory with actual photographs. I, myself, am experimenting with lenses and mirrors of hitherto unknown refractive and reflective indices by which I will ultimately support or disprove my statements. Gentlemen, at next year's meeting of the International Scientific Academy, I hope to have a complete report, not only upon the principles underlying my mirror and its construction, but also upon the results of my research."

IF THE FLOOD of bitter debate started by his paper, the opportunity it gave to satirists and cartoonists, and the wide publicity it received, influenced his actions, Dowdson did not show it.

He made an extended tour that summer. Various records indicate that he circumnavigated the globe in a zigzag course covering both hem-

ispheres from pole to pole. We may assume that he was selecting a site for the completion of his experiment.

It is noteworthy that those who knew him during this period, and they were few, remarked on his increasing testiness and irritability. He became secretive. In July, from Omsk, Siberia, he tendered his resignation to the university authorities. In August, he turned up at the Mount Everest observatory and obtained a variety of astronomical data, including photographs, records of celestial phenomena, charts, and miscellaneous information on displacements and other peculiarities in the motions of stars.

Later in the month, he took the Sub-Pacific Corporation's regular descent by marine bell to the ruins of the lost continent Antiquus, lying in sunken valleys and mountain peaks around Easter Island. He copied the famous diagrams of Loathoth, those strange and undeciphered formulae and inscriptions which still incise a vast block of basalt at the corporation's Descent Route Three.

August 30th found Dowdson computing magnetic fields and electrical phenomena at the south pole. September 6th witnessed his arrival in the Northwest Territory where he studied the aurora borealis and made several observations on the higher wave-length radiations which are peculiarly active in that region as a result of its tremendous deposits of intruded magnetic ores. The middle of September saw Dowdson back in New York. On September 17th, 18th, and 19th, he appeared at a number of firms and bought quantities of optical and electrical supplies.

On October 3rd he was reported missing. An intensive search failed

to disclose his whereabouts. Despite the disruptions of the World War, communication remained in a highly fluid state, but all the resources of public agencies failed to find the missing man. So international a hunt may seem unusual, but it must be remembered that Dowdson was a leading figure in science, and that the scientists were the world's rulers after the peace treaty of 1958.

It seems evident that his wanderings and disappearances were directly connected with his theories. These theories, it should be recalled, were: that the universe is four-dimensional; four-dimensional objects coexist with our three-dimensional perceptions; a four-dimensional object may occupy at the same time the same space occupied by a three-dimensional object; such a four-dimensional object might be perceivable by human beings with their present sensory equipment, but only as a three-dimensional shadow; and since no such shadow had ever been recorded, some intermediary must be essential, such as a mirror of radical design.

THESE THEORIES are repeated in order to clarify the following deposition. The statement was written and signed by Dowdson's assistant, Lawrence A. Gilroy, on May 10, 1970, but is inserted here because it is the only knowledge we possess of Dowdson's activities up to the appearance of the Blinding Shadows. The salient parts alone are quoted from his statement. The original lies alongside Dowdson's famous paper in the Hall of Documents in the National Museum at Washington.

After a brief résumé of identity and previous life, Mr. Gilroy continues: "I served as Professor

Dowdson's assistant at the University of Minnegon from 1967 to 1969. In 1956, I had helped him develop the Earth-Eye which directly ended the Great War." (The Earth-Eye was the electrical mirror that reproduced the scene on any part of the world's surface. It was operated by a complex series of keyboards that controlled each twenty square feet of earth. The Eye made it possible for the Anglo-American-Soviet Union to witness, forestall, and defeat all plans of the Asiatic-African League, resulting in their conquest and virtual annihilation.) "From 1968 to 1969, I made researches in infra-red photography and assisted in the construction of mirrors. I followed his computations. He was trying to reflect a four-dimensional world. None of the mirrors was successful. Altogether, I built four. One was a complete failure, one melted when the current was turned on, two showed only an unidentifiable blur.

"My contract with Minnegon expired in 1969. The university, faced by serious financial troubles, could not renew it. I conferred with Dowdson. He asked me to keep in touch with him throughout the summer. In June, when he was about to begin a world trip, he asked me to dispose of my effects, close my affairs at Minnegon, and without saying a word to any one, meet him at the Hotel Montespout in New York on September 20th. I told him I would. Neither he nor I had immediate relatives or obligations. That was one reason why we had always made a good partnership.

"When I called upon him, we had a lengthy conversation that resulted in my agreeing to disappear from sight and help him perfect his experiment. He was afraid of the experiment itself, or of its success,

though I do not know why. I think also, he was secretive lest other scientists try to obtain his data and get ahead of him.

"Our laboratory lay in the safest of all hiding places, the heart of New York City. It occupied a warehouse on Wendel Street near the North River. That grimy district of warehouses, piers, produce markets, and coffeepots was ideal as a retreat. There we lived and worked. I do not know how Dowdson got the place, but we were seldom outside, were free from interruption, and never recognized during the seven or eight months we stayed.

"From remarks he dropped occasionally, I learned that somewhere in the course of his travels he had obtained formulae vital to the testing of his theories. I believe that this essential data is contained in the diagrams of Loa-Thoth, but if he finally deciphered those remarkable tables, he kept the translation a closely guarded secret.

"On the basis of the data he had collected, we began a new series of experiments. First, we built a mirror of prisms instead of the usual flat surface. The prisms were arranged with infinite variability upon concave, convex, flat, and other modified backings. The results were always striking. Sometimes distorted reflections of recognizable objects would appear. Again, there would be only a confusion of light. Once we saw a mirage. We never found its source and never succeeded in recapturing it. Only for a second, the prisms, whirling through the complex variations made possible by a sequence of four hundred and ninety-six numbers, showed up the outline of some far-away and fantastic city, Cyclopean in size, of shining black architecture, ineffably strange, and apparently deserted,

though I thought I saw a curious mechanical contrivance move and operate as if by unseen hands.

"For all his knowledge, Dowdson found it a physical impossibility to arrange four right angles at right angles to each other. He experimented with cubes, pyramids, tetrahedrons, parallelepipeds, cones, and other geometric solids, by themselves, and in combination through endless patterns of crystal.

"Then Dowdson hit on the idea of using prisms made out of other materials than glass and abandoned his previous work. He tried glyptol, which has the same refractive index, but with no better results. He also tried chromoberyllium and other metal alloys. At that time the newly created elements above 92 were just becoming available.

"No. 95, a peculiarly brilliant and transparent compound, of marked radioactivity, low ductility, high fracturability, and other unusual attributes, interested him. It was extremely heavy, fluorescent, and an exceptional conductor of electricity. In addition, its most noteworthy characteristic was its absorptive nature in that it apparently consumed about fifty per cent of the power fed into it. By that I mean that if we introduced a current of one thousand volts, for example, the resulting current was only five hundred volts. This energy was not grounded, was not transformed to heat, and did not pass off by ionization or other discharges.

"We made exhaustive tests without discovering what happened. In other words, a fifty-per-cent loss of energy occurred that was not accounted for. The best guess was that rhillium, No. 95, transformed the energy into something undetectable, possibly an emitted ray or radiation of such a nature as to re-

quire special equipment to identify it. Because of its ease of fracture and its conchoidal fracture edges, rhillium was difficult to work, but Dowdson persisted and finally succeeded in cutting several hundred perfect prisms.

"I SHALL never forget the day when we completed the rhillium mirror. It was May 8, 1970. Against the south wall of Dowdson's laboratory stood the mirror, a concave reflector five feet in diameter, and composed of six hundred and eighty-one prisms in absolute symmetry. Each rhillium prism was separately wired, power being supplied by a motor that rotated an endless belt that charged the surface of a hollow aluminum globe with static electricity.

"The globe was less than a foot from the cathode that would receive the charge and relay it to the rhillium mirror. In this way, by speeding the motor, the current could be built up to half a million volts if necessary. At various points were ammeters, voltmeters, interferometers, and so on, to record what happened at each key point. Past the mirror was a final series of measuring equipment before the current was grounded. Everywhere stood vacuum tubes, retorts, discarded mirrors, reflectors, refractors, mercury disks, grinding and polishing materials, and miscellaneous equipment that we had been using. The laboratory was a confusion of electrical, optical, and astronomical supplies.

"When Dowdson started the motor, the globe began to shine. Little sparks danced upon its surface. A terrific flash blinded me. Intermittent at first, the man-made lightning roared. The air became pungent of ozone. The discharges

grew more regular as the motor droned on, and the whirling belt began to sing a high song of its own. At last the discharge steadied, and an unbroken arc ripped from globe to cathode, though the flame danced in an ever-changing zigzag in space.

"The bluish flare of the current fascinated me no less than the crackling surface of the globe. Dowdson bent over to make sure that the instruments were registering properly. I heard the dynamo drone on monotonously. And now the many-faceted prisms of the mirror began to shine and glowed like diamonds reflecting all the brilliant colors of the spectrum, and by the expression on Dowdson's face I knew that the old phenomenon was recurring. Somewhere in the rhillium mirror, a fifty-per-cent loss of power occurred and could not be explained.

"But I was more interested in the mirror itself. The prisms shaded through blues and oranges and reds and violets, even whites and blacks and all the tones between, a coruscation of many-varied color that played and shifted through more subtle harmonies than ever the northern lights or the Clavilux showed, a phantom and dazzling parade of hues. Then they softened and flowed into each other, and the prism-mirror became pearly as though one witnessed a rainbow disappearing into fog.

"Then the fog, too, cleared away, and a curious thing happened. The mirror became strangely transparent. It flickered like a draft of hot air, but otherwise it was barely visible. I strained my eyes until they ached, but all I could see was the elusive suggestion of heat waves where the mirror had been. Yet I could not see the wall behind it, hence this was a matter of more than

mere transparency. I can explain it only by saying that I saw nothing—neither mirror, nor wall behind it, nor the outside world. I might have been looking at a blank spot in space.

"A half hour passed, and nothing happened. I felt that we had another failure. There was a certain hypnotic effect in the sounds in the room and the invisible mirror.

"I was recalled from my abstraction by a cry from Dowdson: 'Larry! Behind you! What is it?' I swung sharply around.

"Directly back of me lay the first of the Blinding Shadows.

"It was a three-dimensional shadow.

"I SUPPOSE I should have leaped with glee as Dowdson did at this verification of his theories, but I didn't. The shadow was of too sinister a nature. It was absolutely blinding, like an incandescent fire, and so intense that it could be watched only with smoked glasses, so that we were unable to determine its real color. Perhaps its blinding nature was only the effect of a new color which our optical nerves could not record. I sometimes think so.

"At any rate, the shadow hung for all the world as if it were stayed in the act of leaping at us. It occupied a space opposite the mirror, about three feet from the ground, and eight feet from me. It made me acutely uncomfortable to realize that that shadow was cast in spite of the fact that I stood between it and the mirror.

"It is impossible for me to express my immediate reaction. The queer shadow hanging in mid-air roughly resembled a parallelepiped, slightly tilted downward from the mirror, or upward toward me. I believe that the true shadow would be a rect-

angular solid, but that there must have been present a distortion similar to the lengthening of a two-dimensional shadow when the light is shifted behind the object casting it.

"Dowdson and I walked to the shadow and passed our hands through it, not without qualms. Nothing happened. We judged it to be some five by two by two feet in size. We put screens between it and the mirror, turned all the lights off, turned even brighter lights on, tried to photograph it, subjected it to all sorts of tests, many sound, but a few doubtless absurd, in our attempt to analyze it. Any one who has ever seriously tried to test a two-dimensional shadow can imagine what we were up against. We found absolutely no clue to its nature or its origin.

"Then my guess about the object casting the shadow had a sudden corroboration. Without warning, as we were staring at the baffling shadow, a second blinding luminance leaped into being. It was a similar shadow and several feet away. It hung below the first shadow and seemed more fantastic still. There was a greater degree of distortion in its parallelepiped shape, and it curved through a thirty-degree arc. Now I knew that whatever objects cast these shadows were placed in different relationship to the unknown light, and consequently the shadows differed in appearance.

"I need not go into detail about that afternoon. Shadow after shadow appeared. Sometimes only one would come in an hour. Then a succession would materialize rapidly. They all remained, once they came. They all differed. There were thick, squat shadows, and shadows like torsos, some that curved weirdly, and others assuming

the form of asymmetrical cones, helical spirals, and shapes for which geometry has no classification.

"Each shadow possessed the extraordinary brilliance. Most of them were poised in mid-air. As the long afternoon drew to a close, the laboratory blazed with the singular radiance of these shapes, the dynamo droned on, the lightning roared from globe to cathode, the air became distressingly pungent of ozone, but we scarcely heeded, so fascinated were we by the rapid and sinister materialization of the Blinding Shadows. I think we both felt the invisible presence of whatever objects cast the shadows, but because the shadows varied so, we had no conception of what their source might be.

"There were seventeen shadows by nightfall. They radiated fanwise from the first shadow. Two or three overlapped. Some encompassed our laboratory apparatus. One shadow sprang into existence piercing Dowdson's body and terminating at an electric furnace.

"I remember Dowdson's saying: 'Larry, we've opened the way to fields of investigation that may turn the whole course of civilization! Why, these are only shadows! The next step will be to find out what casts the shadow, and then to bring the fourth dimension to ours, or ours up to theirs.'

"The shadows disturbed me. I couldn't share his enthusiasm. I said: 'What if they are hostile? This is new ground to science. How do we know that we aren't opening a Pandora's box of trouble?'

"Dowdson pooh-poohed my suggestion. 'Nonsense; we've only shadows to go on, and it may be months before we progress further. Besides, these beings are probably just as anxious to learn about us as

we are about them, if the shadows are cast by living organisms as I think they are.'

"I had my doubts, but it was his experiment. The shadows bred in me a distaste akin to the unreasonable fear that children have of dark woods at night. There was something dreadful in the knowledge that something in this very room cast a three-dimensional shadow, and that we might study the shadows for all eternity without obtaining one clue to the real nature of the objects casting the reflection.

"I WENT OUT for sandwiches and coffee at midnight. We lunched hastily. Neither of us slept. All night long, we studied the Blinding Shadows. The dynamo hummed incessantly; the lightning sizzled; and the rhillium mirror, all but invisible, reflected those enigmatic shapes. There were thirty-three of them at dawn. They filled the laboratory. Of every size, form, and kind, they completely baffled us. Each remained fixed, once it appeared, but none was the same. Despite my goggles, my eyes burned from the intolerable glare of the Blinding Shadows.

"We were both pretty far gone when noon came. It was over thirty hours since we had slept, and the tension was unbelievable. What was the nature of the shadows? What beings cast them? How did the rhillium mirror function? Where did the loss of power occur and why? What accounted for the increase in the number of the shadows? Was their source material, or organic? Could those beings, if they were beings, see us, and if so, what was their purpose and attitude?

"I've got a hunch! Dowdson suddenly exclaimed. 'That unex-

plained loss of power represents energy that is transformed and sifted into the world where those shadows originate. It must be visible to them, and they are gathering around the dispersal point to watch!

"I objected. 'Do you honestly think any one would stand still for twenty-four hours? Remember, the first shadow hasn't moved one inch since we first saw it,'

"'What of it? A day of our time may be only a second to them. You yourself have seen how the shadows literally leap out, as if something at a high speed from our standpoint shot in front of a beam of light and stopped, whereas, it might merely be a living entity strolling to watch some oddity of nature in its world, an entity that has summoned its companions to see also. Larry, that's it! The beings are coming to watch a new energy in whatever fashion it registers in their world! And that unknown radiation at the same time reflects their shadow back to us through the rhillium mirror. Perhaps it is *our* shadow that *they* are watching. The rhillium mirror may work two ways. Perhaps they'll be able to see us eventually and we them!'

"'It sounds possible,' I agreed, more from weariness than anything else. 'I'd like some more coffee and sandwiches.'

"'Good ideal!' he muttered. 'Run out and bring me some.' He hovered around the apparatus like a demon, his eyes beneath the goggles bloodshot from lack of sleep. He walked through a couple of shadows, and I thought it strange to see them intersecting his body. As I left, he was bending over the mirror. Ionization of the air, and the intermittent, innumerable sparks

of electrical discharges gave the only clue to the mirror's location.

"I saw Professor Dowdson just once more.

"I bought sandwiches and a container of coffee. Then I hurried back and climbed the single flight of stairs.

"A shriek greeted me as I opened the door.

"THE TERROR came with that wordless cry. I had no more than entered when one of the shadows moved. It leaped on Dowdson and infolded him. The dazzling shape vanished, and so did Dowdson. I think I dropped the sandwiches in my paralysis of fright. I don't know. I was exhausted, and everything happened at once.

"Dowdson's cry still echoed when the strange shadow reappeared. But Dowdson did not come back. I sensed the shadow curving to spring at me. It was a dreadful feeling, what with the everlasting drone of the dynamo, the flaming shadows, the radiant, invisible mirror, the roar of electricity, the crackle of sparks and discharges, and the ever-changing play of fire and color through all the intricate globes and prisms and parts of that damnable invention. And the Blinding Shadows, no longer still, marched alive and purposive. The same shadow that got Dowdson raced after me.

"I turned and took the whole flight of stairs in two bounds. I tore into the street. A couple of men were unloading a truck at the other end of the loft. I raced by them with a yell of warning, but they only looked at me stupidly. They saved my life unintentionally. I heard hoarse cries and looked around. The shadow, more dazzling than daylight, swerved and swallowed the men. In a flash it was gone, and not

a trace of the men remained. There were other people on the street, tradesmen and teamsters. I gasped and begged them to flee, but they must have thought me a madman, and I don't blame them.

"I turned the corner. My last look backward impressed on me a scene I shall never forget. The Blinding Shadows were pouring out of the loft, from its doors and windows, from the solid walls themselves. Every person on the street was being attacked, surrounded, and engulfed. The light of the sun was darkness compared to the blaze of the destroyers. The disappearance and rematerialization of those cryptical reflections came with a fitful rapidity, but the people who vanished with them never came back, and hardly a cry but was cut off abruptly as the victim was stolen from our world, to a fate unknown. There had been forty-nine shadows in the laboratory. There were hundreds now swarming out.

"The next hours are a blank in my memory. For two days I had had no sleep. The shock of the tragedy upon my exhausted system evidently finished me. I came back to my senses late at night and in Jersey, speeding westward. My subconscious mind probably drove me from the scene and toward my birthplace. I got off at the next station and made my way back to New York.

"The city was a shambles. I never saw such black, enormous mobs of people evacuating any site even in the worst slaughter of the Great War. By hundreds of thousands they stormed every exit. The policemen, guards, and troops were absolutely helpless in that tide of stampeding humanity. Panicky faces, the sputter of automoblie engines, the roar of airplanes, the play of floodlights, and the endless

torrent of beings, the mutters and shouts, all blending in a vast and continuous babel of sound and frenzy were as terrifying to me as the shadows.

"From the Jersey heights, I saw the lights of the city shining, but shining more brilliantly than all the lights together were those strange, blinding, voracious, three-dimensional shadows that charged through the streets, hounding every laggard and passing easily through stone, cement, steel, and all obstructions in their quest for prey.

"I convinced a captain at the Holland Tunnel that I could help explain the menace. He took me straight to a conference of the mayor, the police commissioner, the secretary of national defense, and others.

"In their presence, at two o'clock, on this morning of May 10, 1970, of my own free will, I make this statement, repeating what I have just told them, to which is affixed my signature, with the signatures of the last three designated persons as witness.

(Signed)

LAWRENCE A. GILROY.

(Witness) F. A. Waite,

J. N. Norris,

Arthur McCoy."

ON MAY 9th, New York City was still the dream metropolis, raising its proud spires to the sky and seeming as eternal in stone and steel as Rome was in legend. On May 10th, by nightfall, New York was a wilderness where only the Blinding Shadows prowled, and no human being lived. Those who had not fled were swallowed. In one day, a great city became a tomb. For the first time, it was wholly silent, all its noise and sound and smoke, all its traffic and life, stilled. All that

enormous and infinitely varied wealth mentioned before, and concentrated within its limits, a wealth beyond estimate, though guesses have ranged all the way from twenty billions to one hundred billions of dollars, has tempted many but remains unreclaimed.

Gilroy's statement explained without solving. The Blinding Shadows ruled the city. That they did not overrun the State or the country, or indeed the world, can only be understood by a paragraph from Dowdson's famous lecture:

"I have stated that two bodies can occupy the same space at the same time. This, of course, does not mean that they need necessarily do so. It is entirely conceivable that a four-dimensional world might overlap only some portion of our world, such as a continent, a country, or even a municipality, and that neither that world nor our world would have any points whatsoever of contact, identities, or communication, outside that overlapping area."

As this history is being written, ten years later, the catastrophe is sufficiently vivid in the mind of the nation to require no further details.

No one, so far as known, has ever seen the source of the Blinding Shadows, or, in other words, a four-dimensional being. None of the missing persons, whose total number runs into tens of thousands, has ever returned. Their fate is merely conjectural. The Shadows halted within the limits of the area de-

scribed, thus lending support to the theory that the world of their origin overlaps Earth only in a small section centering around New York.

Gilroy died in 1970 at the hands of an infuriated mob, two days after his confession. No successor to Dowdson has yet been found, though one million dollars in cash and the same sum annually throughout his life await the person who releases New York. Meanwhile, the Blinding Shadows roam restlessly about the streets, prowl through deserted buildings, and hover in mid-air, waiting, endlessly waiting. They pass through solids and lie upon the ground with equal ease. Their proportions change when they move. Their eternal silence is rivaled only by the eternal silence of the city that they have conquered.

Why they remain and what they seek are unsolved riddles, nor indeed is there surety that somewhere, sometime, they may not flame outside the barriers and sweep onward, or that some other scientist may not unwittingly loose upon the rest of the world a horde of mysterious, ravenous, and Blinding Shadows, against which mankind is powerless and about whose source nothing is known.

For ten years, the Blinding Shadows have possessed the dream city; and ten thousand times that many years are likely to slip into oblivion without one human tread in streets where not even the ravens hover and where the hellish Shadows endlessly rove.

Next Month:

A "different" Interplanetary novelette

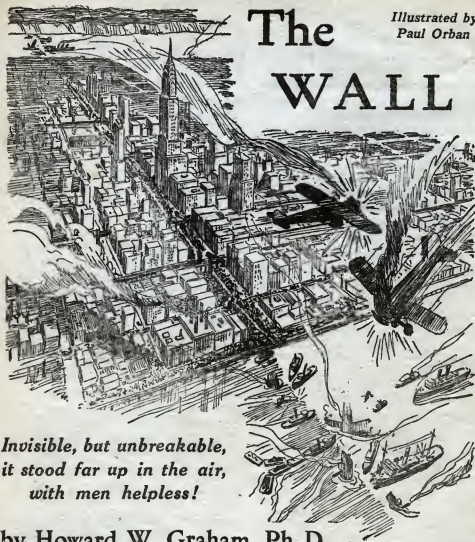
CRATER 17, NEAR TYCHO

by **FRANK K. KELLY**

In the June Astounding Stories

The WALL

Illustrated by
Paul Orban



*Invisible, but unbreakable,
it stood far up in the air,
with men helpless!*

by Howard W. Graham, Ph. D.

ONE EYE blackening, his clothing disheveled, and his necktie jerked into a permanent knot, Jasper watched the scene with amazement and incredulity. He had fought his way out of that incredible chaos inch by inch, and at last gained a point of vantage on the top steps of the public library.

This was no mere traffic stoppage. There was something else, an element of terrible surprise and the suggestion that something more was

involved than the wreckage of a few fine cars. But 42nd Street was a chaos past belief, wherein men and women fought like animals in a kind of nightmare in broad daylight.

A short, doglike man came running around the corner of the library and accosted Jasper as though he had found the man responsible for the whole business. He was breathless, and soggy with perspiration.

"Well!" he ejaculated.

"What?" said Jasper.

"They got a jam like this on Sixth, and another one, only a damn sight worse, on Broadway!"

"What are you talking about?" Jasper shrank away from the fellow, appalled and a little angry.

"You don't haff to believe me," said the stranger, "only the subways is all smashed up all across town, and all the L's is spilling off the tracks. What I seen, you wouldn't believe it. Listen! I been tryin' for more than an hour to get up-town, and there's no place you can get past 42nd Street, not even through the buildings. I simply got to see a man! What is this all about, hah?" He seized Jasper's coat and began weeping.

Jasper looked down at the man as though he had not heard a word he said. A truck down there had overturned, and something in it was screaming above the whole uproar. The pedestrian crowd, entering the spirit of the occasion, swarmed over the jam of cars and fought with each other whole-heartedly. It was not the accident itself, but this ugly aftermath of mob violence that caused so many injuries and deaths.

It was then that Jasper saw the pigeons. There was a heavy beat of wings that came from an uncommonly large flight of these birds that frequented the library courts. They wheeled in a wide, frightened arc over the street, high over the scene of the accident, where they piled up in the air in a flurried mass. They seemed to have struck an invisible wall in mid-air; their fuddled wings thrashed, and numbers of them showered down on the wreckage below with broken wings and necks.

At this same time there was another aerial disaster far worse. A scout plane cruising over the metropolitan area had taken interest in

the unaccountable state of affairs below. It dropped as low as it dared, hurtling down in a fatal power dive, and met that invisible dividing line, thenceforth to be known as the "42nd Street Wall." It was actually about thirty feet from the building line toward 43rd Street. The plane exploded with the impact, and before that unlucky land crew of motorists and pedestrians knew what had occurred, the flaming ship was down on them.

Where the 42nd Street Wall crossed the North River, the liner *Bergen* was to account for a badly damaged hull by having struck the wall obliquely. A number of small boats were totally wrecked, but no lives were lost on the water. Ashore and inland the damage was more serious. Commerce north and south ceased completely, and minor accidents of the most bewildering nature had an appalling frequency.

As one might expect of them, the columnists took it up as a kind of grim jest. If you read such columns you saw: "Now that the most salient feature of the New Yorker is his broken nose—" This because of those scores of persons who charged unwittingly into the Gotham Wall.

Worse, the Hudson River quickly inundated the land once it was dammed by this obstacle. Aside from incalculable property damage, numbers were marooned in the taller buildings as the waters of Flushing Bay were enormously augmented and the Hudson found a new course to the sea.

HOWEVER confounding this state of affairs was, two persons knew where the trouble lay and were the entirely innocent cause of it. While picked corps of engineers were attacking thin air—the wall had no measurable thickness—with

every tool at the command of science, Harold Jasper and Professor Maxim Gorsch stared at each other in an experimental laboratory on Lexington Avenue in a cold sweat of fear.

Jasper arrived at the office in mid-afternoon on the 17th, looking as though he had spent the day at rough and tumble sports. He made no apology for his absence, but for that matter Professor Gorsch did not turn around when he entered the room. Gorsch kept his position in the arena of experimental crucibles, retorts, and what-not, and rocked complacently on his heels. A swiveled power drill, of the sort using tanganim-metal bits, was mounted on the floor. It was turned on a one-sixteenth-inch sheet of steel that had just received a coat of an iridescent green lacquer. This plate was securely mounted between concrete pillars. The professor was pleased because sixty tons and a needle drill were making no headway whatever on what was little more than a tin can rolled flat.

At last he did turn around. He did not notice Jasper's battered face nor his dishevelment.

"It works. You see? It works," he said, rather smugly.

Jasper glared at him, speechless. All he could think of was the uproar in the streets. Along that wall New York was a madhouse. Upper Manhattan was like some idiotic aquarium, with men and women thrashing about in the muddy waters of the Hudson and random fish leaping between their legs. Mud and muck were suspended in sheets against the transparent wall, like some juggler's hideous trick. And simple Gorsch was engrossed in his labors all this while, with no thought or knowledge of anything

that might occur outside this laboratory.

"The armor plate there," the professor explained, frowning. "I haff broken three of the smaller drills on it, and still it is only one-sixteenth of an inch in thickness. My boy, no projectile in the world will pierce it. That drill hass been going since ten thirty, and yet not a mark. My boy, we are both of us millionaires, easily. I will give you half."

He rubbed his hands with satisfaction.

JASPER thought of a number of things, both his job and the chaos in the streets calling his attention at once. The plate was about thirty feet north of the building line. That was coincidence. It was true they had expected marvelous things of the new paint. The plate was mounted perpendicularly, parallel with 42nd Street. And Gorsch had turned his trick at about the time Jasper had had his eye blackened. More coincidence!

"What have you put on that plate?" he asked suspiciously.

"Why, the lacquer," said Gorsch.

He pointed to a jar full of green stuff on the desk. It was so, then; he had already used the paint. This material was Gorsch's new development, prepared, of course, with a few of Jasper's own ideas. This particular paint was the by-product of high-power discharges which they had filtered through a "perfect occurrence" mixture of the inert gases—these gases proportioned as they occur in the atmosphere.

Both men were retained by the Greater American Products Corporation as "engineering counsel in new construction methods." They had perfected the company's synthetic wood and stone and various

paints of remarkable permanence, not to speak of a superior brand of flexible glass. The power discharge through the inert gases, under a pressure of from thirteen to fifteen atmospheres, produced a brilliant green powder, for which Jasper had found a solvent. In solution the stuff made magnificent paint. In Jasper's absence the professor took unto himself, as usual, the prerogative of doing a little fiddling on his own. He had already named the product "Beetle Lacquer" and was thinking about retirement.

"When did you put it on?" barked Jasper.

The professor was startled. He looked at Jasper with considerable resentment. "Ten o'clock sharp," he said. "I painted the plate at ten this morning. What is the matter with you? Did you have an accident?"

"An accident!" Jasper ejaculated. "Have you been outside at all today, you old fool?"

"When I begin a test," said Gorsch, bristling, "I bring my lunch. I do not leave anything half done."

Jasper strode past him, ignoring the insinuation, and hastily went over Gorsch's apparatus. The drill was turning at high speed, but making no impression whatever on the steel plate. Jasper started around it and ran into the invisible wall. He swore. There it was, coinciding exactly with the plane of green lacquer on the plate. He flattened his hands against it and followed it to the lacquer itself; he was ready to assume then that the great Gotham Wall was of the identical thickness of the coat of paint, and no more.

Gorsch watched him, dumfounded, as he cranked the drill off to one side and turned the point into this impassable barrier. The motor

snarled, and the oily tanganim point^{*} began to smoke with heat. There was no drilling through that substanceless plane.

He rightly suspected that some similar phenomenon must be connected with the original jar of lacquer itself. Turning to the desk, he tried to pass his hand over this jar and met solid resistance. He was totally flabbergasted. Once before this they had concocted a paint that would turn a drill, but this was something quite else. This paint, some disastrous allotropic form of the inert gases, so changed in hardening, a freak accountable to the vast, unlucky store of power in the laboratory, that the air around it was rendered solid and immovable.

Gorsch, of course, had smeared the edge of the jar somewhat when he painted the plate. Wet, the enamel was unremarkable save for its intense color, for Jasper had handled it carelessly enough the night before. But as a dry coat it became a singularly impenetrable substance which exhibited the further property of extending a plane of resistance outside itself, in a ratio yet to be discovered. Thus, by encircling the invisible column above the jar with his hands, Jasper found that its diameter was that of the jar, measuring from the rim of dried lacquer around the cover. How high this column extended he could only guess.

Jasper rapped the air above the jar smartly with his knuckles and caused a clear, faint, bell-like ringing. This column of air, subtly changed by the influence of the lacquer, had the rigidity of metal. Outside, there were so many crashes of all kinds with the wall itself, that it sounded over Manhattan and over the sea like an everlasting gong.

Jasper turned on Gorsch and said:

"Beautiful! Millionaires, eh? Gorsch, though it's no fault of yours, you'll have us on the penal island as public menaces for this. Do you know what you've done?"

Gorsch listened to Jasper's account with glassy eyes. The wall, Jasper figured, was only of the thickness of the coat of lacquer. It ran across town, through all structures crossing a point about thirty feet north of the building line on 42nd Street. What its length was he did not yet know.

THERE was something that must be found out, and that quickly. The plane, the Gotham Wall itself, could not be moved in the slightest. Though it had the transparency of the air itself, it had a greater inertia than any mass of stone or metal. It had stopped a plane and motor trucks driven into it at high speed. But, possibly, the plate could be taken off its supports and destroyed.

Gorsch watched Jasper free the armor plate from the binding posts. He took a deep breath, then, with a common suction cup from the toilet, he pulled the plate outward, the faintest shadow of a degree off the perpendicular. The concrete floor cracked briskly across the room. A bit of plaster fell. Jasper shuddered and screwed the plate back into position.

"Professor Gorsch," said he, his voice quavering, "you put that thing up—now you can take it down again!"

Gorsch was alarmed. He chewed at his white mustache in perplexity.

"We could bring the plate to the horizontal," he suggested timidly.

"I just tried that," said Jasper. "If you move that plate you'll shovel up half the buildings in New York and throw them into the Atlantic

Ocean. For all I know," he shuddered again as he thought of this, "you'll scoop a hole in the bottom of the ocean itself. And then where will Manhattan be?"

It was the absolute inertia of the lacquer which they could not cope with. The invisible wall which extended outside the film of paint was impassable, an immovable object. But the fact of such a wall's existence was not so disastrous, after all, as the fact that the object which had been painted *could be moved*, and moved easily. For, in motion, its extended and transparent plane moved with it; and in moving was irresistible.

On the third day of the tie-up New York was declared under martial law. These extreme measures were found necessary when the mob of rioting, bewildered citizens had caused immeasurable property damage and when organized crime began to avail itself of the opportunities offered by this unprecedented confusion.

All cross streets were re-routed for policing; Governor Harris stationed a sixty-mile double cordon of militia to the limits of the wall on the mainland. North of the wall there was a brisk trade in small boats. These carried the police and the overflow of citizens from the elevated. The subways, of course, were flooded, with Manhattan somewhat more than a fathom under muck and water.

At the end of the second week, on the thirtieth, the city itself had split in two main governments. The old political machine enjoyed a brief renaissance under an emergency board on its own side of the wall, with its own mayor, and having its own special officials by appointment. Mayor Russel, casting aside the minor financial troubles of the mo-

ment, set up a "Commission for Inquiring into the Nature of the 42nd Street Wall." Mayor Byam followed suit, creating a great deal of unnecessary confusion. There seemed to be small logic in any extensive underwater inquiries when the south of the wall was not so obstructed, but a step of some kind had to be taken since the fire departments and Red Cross had already relieved most of the victims from their distress with scaling ladders.

The Russel Commission gave Jasper and Gorsch one sleepless night after another. While Gorsch stood guard, Jasper bathed the plate with every acid in the laboratory and treated the lacquer with every chemical that might have an effect on it. The solvent he had discovered for the powder would not dissolve the lacquer once it had dried. Heat affected it not at all, and it was unsafe to apply more pressure than had been used in the drill. Jasper could have knocked down the two supporting concrete pillars with comparative ease, but that was just what he was afraid of doing. If the plate moved at all, the building would have been split from top to bottom.

LIKE a leash of ferrets, the Russel Commission's engineers went over the wall from beginning to end. When any one came in sight in the halls, Gorsch would make a sign to Jasper, who would slide a bureau that was innocent enough against the plate. This bureau, with two cots, made the laboratory into very satisfactory living quarters. Many had done the same, making their offices their homes when they could not conveniently get back uptown.

There was nothing extraordinary about the room, but Russel's men were a suspicious lot and looked

upon every man along the wall as a potential criminal. They held powers of arrest and would brook no interference even of the most casual nature. They were uncomfortably inquisitive.

"Where did that come from?" asked one of them narrowly, pointing at the drill.

"Why, it belongs here," said Jasper. "We're engineering counsels for the American Products Corporation."

"Counsels hell!" snapped the inquisitor. "What's it for?"

"We're trying to get through the wall ourselves," said Gorsch meekly. "I haven't seen my wife for three weeks."

"You leave that to us," said the engineer menacingly. "If there's a way of getting through, we'll do it!"

He passed on an order or two, and that morning the power drill was dismantled and confiscated by authority of Mayor Russel. The engineer in charge of the work—he was Francis Herder, soon to become a great name in engineering—came dangerously near the jar of lacquer. Jasper's heart was in his throat. If that jar had been moved, the building would have been down about their ears, knocked to pieces by the pillar of rigid air that extended above and below it. The plate would have gone down with the building, and the city of New York down with the plate, into the sea.

Both sat down weakly on the cots when the commission had gone.

"Did you hear what they said?" asked Jasper.

"About Lexington Avenue?"

"Yes. They've measured the wall from end to end. Even the meteorologists are in on it. They've measured rainfall and say that the wall is a hundred and twenty miles long and approximately sixty miles high.

Lexington runs through the middle of it. If they're right about its going sixty miles deep into the earth, that damned plate has made a wall that's a perfect square. Gorsch, this is the end of everything. They say they'll find the reason for all this somewhere near Lexington Avenue."

"We have got to run away," said the professor.

"We have got to do nothing of the sort," Jasper retorted. "Don't you feel any responsibility for all this? If that bungling commission starts poking around in this room, all they'll have to do is upset that blasted jar of lacquer. It would be wholesale murder. Tell me how you'd feel, Maxim Gorsch, with thousands of deaths on your soul! If you've got one," he added bitterly.

"But you are unjust—I can do nothing!" the professor wailed. "I am going to the commission and tell them what I have done. I am sorry for it!"

"You're not going to tell any one anything!" shouted Jasper. "There'd be an investigation that would smell to high heaven. And how about the formula of that lacquer? Would you keep your mouth closed, eh? Let any unscrupulous agent get hold of it, and you know what would happen as well as I do. Absolute inertia. It's a perfect weapon for offensive or defensive war. Think, Gorsch! Think of what a long-range club you could make out of—out of a pencil! Why, with one of these plates at your back the size of a penny you could plow up a navy! With a pencil! I don't suppose you'd care about that, though, would you? Oh, no, Maxim Gorsch, you won't tell. We have got to destroy that stuff somehow, and no one but ourselves

is ever going to know what happened."

IT WAS easily said, but time was getting terribly short. Something had to be done in a hurry, because the Russel Commission was definitely concentrating at Lexington Avenue. Buildings there were infested with them. The Lexington area became their headquarters, and you could not come or go without running into some one who was an engineer and a secret agent in one. There was a war scare that year, and there was reason enough in eying even the most innocent citizen twice when this thing might easily be an alien government's first surprise move.

The commission evacuated subways and made tests below ground. They agreed that the wall extended deep into the earth and were satisfied that the distance was roughly sixty miles.

The wall would not pass anything solid. It would filter water very slowly, however, and air circulated through it to some slight extent. Electric cables that were laid north and south functioned as well as ever, but all radio broadcasting was cut with a terrific field of static. It was only the fact that all parts of the wall caused equal disturbances that had prevented the radio finders from locating the dead center of the wall.

One engineer wanted to run diagonals from corner to corner and thus find that dead center. Other engineers wanted to know what diagonals running from what corners to what corners. Jasper told Professor Gorsch it was a damned lucky thing he hadn't used a two-yard plate instead of a two-foot one, or he might, if the area of the wall did answer to the area of the plate, have cut the whole country in two and

very likely sunk the continent before he enjoyed the honors of discovery.

THE JAR of lacquer was rapidly assuming importance of the grandest kind. There was dust on the desk that neither counsel—Gorsch and Jasper were bitterly sorry they had ever heard that title—dared to disturb. The slightest tremors of the building, the merest vibration at all, filled them with anguish.

At last Gorsch opened a container of one of their own incomparable glass binders and tenderly applied it to the base of the jar. Sweat pumped out of his old frame in a steady flow. He catfooted nervously back and forth, perfectly well aware of the possibility of unequal hardening, until the binder was thoroughly set. Then, and not until he tried a needle on it, he breathed a gasp of relief, and Jasper and he set about fixing the legs of the desk to the floor.

As they were so occupied, the building superintendent, a fat, harassed, but soft-footed individual of fifty-five, puffed into the room. The two counsels were completely surprised and rose shakily to their feet. The superintendent announced pathetically that the commission was evacuating, one by one, all occupied offices on the line. No notice was to be served other than verbal. When the commission arrived, an office was expected to be unoccupied. Apologizing, the superintendent puffed out again.

"Well," said Jasper, somewhat relieved, "at least they can't get this outfit loose without using an ax." He meant the desk and jar. Once set, the glass binder made them an integral part of the floor.

But Professor Gorsch sank back to his cot and groaned. He was a

proud man, and could see nothing for himself any longer in this affair but ruin. Jasper stamped back and forth, his brow wrinkled, and abruptly vanished through the door. He was going down himself to see the commission.

Herder was in charge.

Jasper walked up to him and said: "I understand you're cleaning us out."

Herder didn't answer. He simply nodded his head at Jasper and kept on nodding, as though he never tired of agreeing with some one. Underneath he was still a politician, the one-time proprietor of a cigar store in Brooklyn.

Jasper said: "We *can't* move. All our crucibles came through the elevator window in the north end."

"Leave them behind," said Herder softly. There was something essentially vicious in his manner.

"We're in the G suite on 14," said Jasper. "What's the dead line?"

"We may be up there to-morrow," said Herder, "and maybe not for six weeks. Take your pick. But don't let us find you there when we call."

Jasper hurried out, feeling outraged, as though he had been caught in some act of counterfeiting. When he arrived at the laboratory he was panting like a dog.

"The game's up," he said. "If you can think of something, let's have it. Gorsch, I never had to come into this thing with you, and now we're both in to the neck. I'm not sorry. I've seen that louse Herder, and he's got a bad eye. Think of something, Gorsch."

"I was thinking," said Gorsch, "that maybe lacquer would dissolve lacquer."

Jasper swiveled around in his chair and stared at the jar of green paint anchored to the desk.

"Maybe it would," he said, "but

how are you going to get at it? You can't get to the cover any more, because the column starts with the dried lacquer on the rim and the cover is inside it. There's no time to make any more of the stuff, either, because our apparatus is on the other side of the wall."

"There is acid," suggested Gorsch, "to eat the glass away."

Jasper shook his head. It was too dangerous. Paint would spill out of the jar, some of it was bound to, and they would be in a worse predicament than before. It would mean immediate discovery; at this moment some one might have run into that fourth-dimensional column that extended upward from the jar of lacquer, and downward from it also, through the floors below, through the very headquarters of the Russel Commission.

Jasper rose and examined the jar again, effectually sealed against the most determined safe-cracking by an invisible barrier. His knife slipped off this column like a pencil on glass. If only he had the time to inquire into the nature of the phenomenon, and how the paint in drying effected this absolute inertia in the air extended from it! It would have been valuable to know whether the same freak took place in a vacuum; whether this column in particular stood only as high as the Gotham Wall, or, indeed, mounted above the earth's atmosphere into open space.

The column was not a perfect cylinder, its contours following the conformation of the dried lacquer on the rim of the jar. At one point, where areas of paint touched but did not overlap, the knife blade caught in, but did not enter, a crack.

With a glass trained on that crack, Jasper called the professor and told him he thought they could get in,

or at least find out whether it would do them any good to get in. Gorsch hunted up a tray of platinum filaments in graduated sizes and tendered them to Jasper as though he were handing over his soul. Jasper took them and fished with one wire after another.

Gorsch hung on his shoulder and said: "Does it go? Does it go?"

"Get away, I can't see!" exclaimed Jasper irritably.

He set himself to the brain-racking task of twisting an almost-invisible corkscrew of platinum through a quite invisible crack in the air, down through the brush hole in the lid of the jar, and into the lacquer. He managed it. A few glistening green beads of paint came up on the wire and scraped off in the crack. Jasper fished again, and once more the beads scraped off. One small drop collected. The two men stood there, fidgeting and waiting.

Jasper tried his knife in the crack. It had widened; the new paint had softened the dried film on the jar.

"It works, Gorsch!" said Jasper in a hoarse whisper.

He tried a pencil. The pencil passed through the crack, and shortly he was able to reach the brush Gorsch had left in the jar. In a few minutes he had applied lacquer to the circumference of the rim.

MEANWHILE Gorsch had started a crucible, and by the time it had reached white heat Jasper had penetrated the whole column above the jar and wiped off the excess lacquer with waste. He threw waste, pencil, wire, and cover into the crucible, instantly. All were consumed, with a sharp, clear report like the explosion of a shell. The glass cover melted at once and

danced and blistered in the trough of the open furnace.

Jasper worked desperately, polishing the jar with waste soaked in the chemical solvent of the lacquer powder. He kept throwing these pieces of waste into the crucible while the reports diminished and finally ceased. Then he poured a quantity of the solvent into the jar to insure Gorsch's "Beetle Lacquer" against any quick drying, slid a glass panel over it, and rested, mopping his brow.

A trio from the Russel gang downstairs burst through the doorway and shouted as one man: "What was that?"

"What was what?"

The whole thing seemed very silly, now that success seemed to be on the way; Jasper eyed these intruders with irritation and contempt.

"Those explosions. What's going on here?" It was the cursed voice of authority speaking again.

"Nothing!" snapped Jasper enigmatically. "Get along, you! We're moving out of here."

That was his sole explanation, but he stood against Russel's men so beligerently that they shuffled their feet like a group of small boys. They hesitated, then moved on together to find the cause of the disturbance elsewhere, as though no one of them had a mind of his own.

Gorsch returned to the crucible at once, extracting every last calory out of his machine. The glass cover had blistered out of sight. There was no time to find out whether the air above the crucible had been affected or not, but they rightly assumed that the lacquer had been broken down into its essential gases.

Gorsch worked as though he had only one purpose in life. He had

rigged up a "booster" line for additional current and nursed this power supply until he came within a hair of reaching the fusing point of the crucible. There was smoke in the air. When he looked at Jasper there was impatience, but still something boyish and eager in his manner, as though he realized he had done something well.

"Ready?" asked Jasper.

"Ready!" Gorsch croaked.

Jasper painstakingly inserted a ball of waste into the jar, removed it and managed not to spill a drop. He applied this evenly to the armor plate, covering every pin point of lacquer, and tossed the waste into the furnace. There was an eruption of green flame; the vertical explosion which followed dropped a perfectly cylindrical piece of the ceiling, a disk of beryl steel and concrete, into the crucible, where it quickly melted and puddled like a mass of hot quicksilver. Jasper and Gorsch stood on their toes and cracked their jaws, momentarily deafened.

The whole commission would be in on them in no time at all. Jasper kept his knife blade against the plate until he could scrape through to bare metal. He waited a second or two before he hazarded everything, then clipped the screws holding the plate and tossed it, plate, knife, clippers, and screw heads, into the crucible. Another column of green flame struck up from it.

Gorsch and Jasper plugged their ears and watched fragments of concrete shower down from the floors above. Molten stone splashed out of the furnace and peppered them with miniature showers of sand as particles exploded in the air. There were pin pricks of blood on Gorsch's head.

"The jar!" Jasper shouted.

Gorsch pointed to a bottle on the shelf. Jasper and Gorsch never prepared a perfect binder without a perfect solvent for it. Jasper unstoppered the bottle and poured its contents liberally around the jar of lacquer. Gorsch left the crucible and stationed himself in the doorway. The empty halls were still reverberating with a long chain of echoes, but he thought he could hear an uproar of voices below.

"Here they come, Jasper!" he shouted.

Jasper tugged at the jar.

It gave.

"Ready!" he screamed, with all the power in his lungs.

Gorsch nodded and covered his face with his long, bony fingers. Jasper tossed the jar gently and carefully into the exact middle of the furnace and sprinted for the doorway. He was a fairly powerful man, and picked up Gorsch as though he were a scarecrow. He guessed right, and leaped into the air with Gorsch in his arms as the lacquer went off.

The crucible plunged down into earth, missing, as luck would have it, every last engineer in the Russel Commission below. Jasper and Gorsch had stopped their ears and felt rather than heard that cataclysm of sound as they sprawled along the corridor. It was a fortunate thing, for a long section of the wall of the building caved in following the tremendous suction, and eardrums burst with it.

THE REPORT was heard, or so it was claimed, in Ireland. But what reached widespread fame was the pole of solid green fire that flagstaffed far out into space. It was an unforgettable sight, like a connecting bar between earth and the shell of stars.

The Hudson River, undammed, returned to its channel at once and tossed stranded boats into wreckage. The uptown subways emptied, and for hours the whole underground system ran like a network of sewers. Uptown New York lay stinking under the sun, blanketed with muck that the diverted Hudson had left behind.

There were earth temblors that year, running east and west. Out to sea the bed of the ocean boiled, and a certain area in the Atlantic was unpleasantly warm.

As one consequence of the affair, a source of everlasting joy to Jasper and Gorsch, Francis Herder, Russel's chief engineer, came in for considerable attention. He had been working below with a machine using centrifugal explosives of a perfectly ordinary patent, and had fired at about the time Jasper threw the jar of green paint into Gorsch's crucible.

Jasper and Gorsch, totally helpless in the matter, had managed to advance the man, the engineer in charge at the time the Gotham Wall was broken down, into being the most-sought-after engineer anywhere in the world. Neither counsel cared very much about that. They were free.

Next Month:

HE NEVER SLEPT

by John Russell Fearn



Illustrated by
C. R. Thomson

*The story of a strange scientific
nightmare*

Succubus

by K. F. Ziska

AS I SIT here at my desk, the glow of the desk lamp seems to bolster up my outraged feelings. My mind is in a turmoil of emotions. I have just read the description of an experiment so revolting, so unbelievable, that I hesitate to put it down. But I must do it or destroy my peace of mind.

I, James F. Carleton, am a physician. Although I may not have become eminent in my profession, I enjoy a fairly lucrative practice and have also become assistant to the

chief of staff at one of the larger hospitals. I say this with no undue pride in my accomplishments, but in the hope that this statement will lend credence to my fantastic story.

When I was a medical student, one of my classmates was Igor Boronoff. Igor's father, a Russian aristocrat, had fled to this country some years ago. On arrival here, he had purchased a Southern estate over which he reigned with almost feudal style. As he had studied medicine in his youth, he had urged

his son to do likewise, even though his wealth did not make it necessary for Igor to practice afterward.

Igor was the despair of his teachers. He often caused a near-riot in his classes by propounding some startling theory or ridiculing some hallowed tradition. His constant "Why?" soon became dreaded by his exasperated professors.

During his last year, he was called home by the serious illness of his father. Shortly after Igor's arrival, the old man died. When Igor returned, several weeks later, his eyes blazed more than ever. His irony, once amusing, now was sharp as steel. No one offered to arouse his vitriolic ridicule. Only in my company would he relax and behave like a rational person.

I can still hear the dean's sigh of relief as he handed Igor his diploma. Igor accepted it, a sardonic smile playing about his lips. We bade each other good-by.

"I am going to Europe for further study," he announced. "If I am to carry on the work I wish to do, I must learn a great deal more. Good luck!" A wave of his hand, and he was gone.

Several years passed during which I heard nothing from him. My practice had increased; I did considerable work at the hospital, and I had given him but fleeting thoughts at times. Then I ran across an article written by him. It gave a painstaking analysis of the differences of cell structure of hybrid plants. His theory, supported by countless experiments, threatened to overthrow the Mendelian law. Also I received a letter from him, pleading absorption in his work as an excuse for his seeming negligence. He was now living on his Southern estate.

His articles, appearing at odd intervals, quickly attracted attention

in the scientific world. His researches necessitated various changes in textbooks on biology and biochemistry. He became recognized as an outstanding authority on these subjects. Honors, degrees, club memberships, were showered upon him. His home was invaded by strangers. Igor was furious. He declined all honors, fenced in his estate, and permitted vicious dogs to roam about to insure absolute privacy. He ceased to write articles and withdrew from the world.

His letters became fewer and fewer as the years passed—ten, fifteen years. His last letter, received a few months ago, spoke vaguely of some serious problem which was likely to change the course of his life and begged me to visit him as soon as I could. Was this the bold, satiric Igor I once knew? Alarmed, I made hasty arrangements for my departure and left.

AS I DROVE up the driveway, leading to a colonial mansion, I noted that the shrubbery and gardens had grown into a tangle of wilderness. Igor, himself, opened the door. His appearance shocked me. His hair was white. He had lost in weight till his skin appeared to hang loosely upon his bones.

Emotion overwhelmed me. I opened my arms and cried: "Igor!"
"Jim! Jim!"

It was a wild cry of relief. He crept into my arms like a child. Hysterically, he sobbed upon my shoulder. Tears welled to my eyes as I patted his shoulders. Suddenly, he tore himself loose.

"We're acting like a pair of sentimental fools. You must forgive me, Jim; but I've been under a severe mental strain. Come inside and make yourself comfortable. I hope you will excuse my appearance; but

I didn't expect to see you so soon. Make yourself at home while I dress."

When we met in the library somewhat later, he seemed more like his old self. Dressed and shaved, composed, he looked like a different man. We seated ourselves, puffing at our cigarettes. I decided the time had come when I must take action to solve this mystery.

"Igor," I asked, "what is the reason that prompts you to act as you do? As a doctor, you must know that physically you are completely wrecked. You absolutely withdraw from human contacts. You refuse all honors which are justly accorded you and insult the finest men and institutions with your vicious sarcasm. What is the real cause of your insane behavior? Has your work been unsuccessful? What of it? Is it worth your health?"

He shook his head slowly. "Jim, my work has not been unsuccessful. I have met with success. Success!"

He lingered over the last word as if he were weighing mentally its exact meaning and uttered a short, bitter laugh.

Once more I decided to force the issue. "Igor," I announced, "now that I am here, I intend to go to the bottom of this nonsense. I will not be satisfied with vague references. I propose to make an end of this damned mystery! Take me to your laboratory!"

He bounded to his feet. His face was distorted. His outstretched arms warded me off. "No!" he shrieked. "No! You wouldn't understand. No, I tell you!"

His shrieks affected my composure. It was only through a decided effort that I controlled myself and sank back into the chair.

"Igor!" I exclaimed. "Igor, calm yourself! Sit down!"

Trembling, he collapsed into his chair. Slowly, reason returned to him. He sat with his elbows on his knees, rocking back and forth, running his fingers through his hair. He got up again, pacing around the room. He walked over to a desk, unlocked a drawer, and took out a large leather folder containing a sheaf of papers. He gave it to me.

"Jim," he was speaking slowly, carefully, "this folder contains notes which will explain everything to you. They are a record of the thoughts and experiences which have occurred to me during the time I spent in conducting my experiment. These notes are not technical. I asked you to come down here, intending to tell you the whole story; but I can't do it. I want you to take this notebook back with you to read in strict privacy. I want you also to give me your word as a gentleman that you will not divulge its contents to any one."

"All right, Igor. I won't reveal its contents," I promised.

"One more thing," he proceeded, "when you read this diary, I want you to read it as the doctor, and not as my friend. Leave all personal feelings aside."

I assured him I would try to follow his instructions.

We talked late into the night; and he appeared greatly improved in spirits when we retired. I left the next day, after he had assured me he felt better.

I arrived at home late in the afternoon. I gulped down my dinner and retired to my study. At last, I was to know the secret which had nearly wrecked my friend's health and peace of mind. Had I known the horror which this diary was to inspire in me, I should never have read it. As it was, I turned the leather cover, and began to read:

"TO-DAY MARKS the turning point in my life. To-day I planted a seed which, in due time, will shatter every so-called law of nature and cause a cataclysm in the scientific world; or burst my theory, based upon years of study and experimentation, like a soap bubble. I have started this record—perhaps I should call it a diary—as an outlet for my emotions. I cannot confide my hopes and fears to any one, and I have chosen this method of relieving my pent-up feelings.

"It is strange that events, apparently having no connection whatever, may yet be closely linked to each other. A professor's groping for a fitting simile led to—so I hope—a discovery of far-reaching importance. It was during my junior year at medical college. A professor in one of my classes endeavored to explain some point pertaining to parthenogenesis. He attempted to demonstrate the impossibility of transferring functions of certain species to other species. He finished his remarks with 'and this is as impossible as—as——' he groped for a fitting simile, concluding triumphantly, 'as fertilization between species of plant and animal life.'

"I disliked this man intensely. He was utterly dogmatic and unimaginative. For this reason, I took exception to practically everything he said. When he uttered this statement, I protested immediately. He brushed my protest aside impatiently, mumbling something about 'laws of nature,' and went on with his lecture. I was highly incensed, but had to admit to myself that I had no grounds for a reasonable debate. That moment I vowed to myself that some day I would prove him to be nothing more than a highly trained parrot.

"When I finally thought I pos-

sessed sufficient knowledge to start my research work, I spared no expense in fitting out a laboratory with the finest of equipment.

"At the end of two years of work I found myself up against a blank wall. But I did not become discouraged. It was true I had spent two years, but I had gained valuable information during this time. At least, my problem had emerged from a mass of diverse experiments. It was to produce cells, both plant and animal, which were sufficiently alike in structure, chemical constituency, and activity to permit generation of a hybrid cell.

"Many weary months followed. I thought myself near success several times, but the cells did not fuse. I tried hybridization of plants and also of animals. I found myself limited in this procedure as too much hybridization was likely to result in debilitation of the newly created cells. Again followed a long period of tedious work. I did not find what I was seeking, but I did observe some phenomena which interested me sufficiently to publish.

"I had not foreseen the result of these publications. I was hailed as a genius and annoyed to the point of distraction with numberless requests and visits. As I detest publicity, I made short work of these botherations.

"At last, chemical and microscopic examination convinced me I had produced cells which would fuse. I joined them and awaited results. I believe I made microscopic examinations of the cells every ten minutes till common sense told me I was behaving like a schoolboy. But I still made periodical examinations. During one of these, I made an astounding discovery. I looked again. There was no doubt. Some of the cells had fused. I performed a wild,

triumphal dance, shouting senselessly, and upsetting half of the furniture. I had succeeded!

"THE NEXT thing to do was to apply my experiments to a practical end. But there I ran into the difficulty which I had prophesied to myself. Decided weakening of parental strains, due to continued hybridization, resulted in the inception of frail, plantlike monstrosities with animal characteristics. They died almost as soon as they broke through the soil. Atavism was very pronounced and frequent. Some of the animal-plant creatures had almost all of the characteristics of plants and hardly any of those possessed by animals. Others again were mostly animal. They never grew beyond fetal state and died beneath the soil.

"I was deeply perplexed. If I tried to use a pure strain, the cells did not fuse; if I hybridized the parent cells far enough to permit fusion, I produced weaklings which died shortly after inception. I was greatly disappointed; but now I refused to give up. I tortured my brains for another method of approaching the desired result.

"Then a revolutionary idea struck me. What would happen if I attempted fertilization between a pure cell of one parent and another cell derived from hybridization of cells of the other parent? I went one step further. What would happen if I attempted fusion between a human spermatozoön and the ovule of a properly hybridized plant? Instantly I proceeded to test the possibility of my hypothesis. I worked with feverish excitement. At last, I was ready. I prepared the final experiment. My hands shook as I adjusted the microscope. I looked. The blood mounted suddenly to my head. I had performed a miracle.

The ovum was fertilized!

"I waited till the ovum developed into a seed. My heart beat audibly as I planted the grown seed. I regulated the temperature and humidity of the laboratory with infinite care. I gave a measured supply of water at regular intervals to the specially prepared soil. I did everything possible to further the metamorphosis of my creation. I could only wait now.

"I watch and watch, but nothing happens. Am I wrong after all? I cannot be! If I am—but why even think of that? I know I am right. It is just a matter of time, of patience.

"Still nothing! This suspense is trying my nerves to the limits of their endurance.

"The mother plant is a hybrid of two perennial plants. The period of growth, as determined from that source, should be a year. As the growth of the male source is less than a year, the organism I have created should begin active life in somewhat less than a year after I had planted it. But—have I the right to generalize? I am dealing with a phenomenon which is totally unknown to science.

"Nothing yet! There is nothing I can do but wait—wait. My nerves are beginning to assert themselves. I find sleep increasingly difficult. I have found bromides necessary to quiet my jumping nerves.

"I have won! To-day, as I looked mechanically at the humus, my attention was riveted to a slight break in the soil. I was on my knees in a moment. With uttermost delicacy, I removed small pieces of the soil which surrounded the break. I saw a tiny, white growth in the aperture which I had made. I cannot sit here any longer to write. I must return to the laboratory.

"There is no question about it. I have performed the impossible. It is growing. It is now about a half inch above the surface of the soil. This is the height it has attained during a period of three weeks.

"It has grown to the height of an inch. It is a pinkish-white growth, similar in form to that of a pestle used by chemists for mixing coarse-grained substances. Using a strong magnifying glass, I determined that the largeness of the top was caused by the fact that it was rolled under. It resembles a human finger bent underneath as far as possible. On the sides of the growth are two finlike appendages also partly rolled up. From its base grow three protuberances, in shape like large beans. The skin, which covers the whole mass, is very soft and wrinkled in deep folds.

"I made a startling discovery today. I entered the laboratory after I had taken a brisk walk in the cool air. Stooping over to brush away some loose earth, I happened to touch the plant lightly with my fingers. It jerked away with a visible motion!

"Its folds are beginning to fill out. The appendages and the top are gradually straightening. I have noticed that the growths at its base are diminishing in size. I cannot say what their function is, although I surmise them to be concerned in the nutrition of the organism.

"The appendages have almost unrolled. They are quite similar to the arms of human beings. Its top is almost straight now, only the very tip being still bent under. A large crease, which, starting at its middle, runs down the center to the bottom, suggests a human figure standing erect with legs pressed tightly together.

"I wonder what sex, if any, my

creation will have? Its shape is still too indefinite to tell.

"DESPITE my exultation, I felt revolted at the gruesome discovery I made to-day. The top of the plant-creature had lifted itself sufficiently to permit investigation. I knelt down to peer underneath. The dispassionate examination of the scientist gave way to a feeling of shuddering aversion. I saw the unmistakable outlines of a human face!

"The eyes, mouth, and nose were quite clearly delineated. Strangely enough, its eyes were still shut. I could see no ears, although two tiny knobs at both sides give promise of developing into ears at a late stage of growth. A faint indication of silky down leads me to think it will also have hair.

"There is no longer any doubt in my mind about the appendages. They are arms. They are completely unrolled now and show five tiny fingers on each hand.

"Its eyes are open. There must be a decided lack of certain pigments in my creation, for, like an Albino, its pupils are pink.

"I am overjoyed. I have not brought into existence an asexual monstrosity—my creation is female. I was afraid I had created some sexless thing; but now I know I have hurdled even that barrier.

"It—— No! I will no longer use this pronoun. I will use 'she,' in speaking of her. She is now a foot in height. I was right in assuming that the knobs at the sides of her head would develop into ears. Unlike human ears, they are not irregular in outline, but resemble, smooth, one-petaled corollas of flower cups in their delicate roundness. The down on her head is becoming heavier and longer. It is of silky texture, a light blond—almost white

—color gives it a beautiful sheen.

"I was surprised to note her legs are not grown together as I had thought. As she moved to-day, I observed a space between them. No doubt, she held them together until now to support her weight more easily. I have never examined her to determine the possible existence of a bony structure within her, because I was apprehensive of injuring her. I inspected her closely to-day, using extreme care in doing so. I detected the presence of a cartilaginous structure within her, although I could not find any indication of joints such as knees, elbows, or wrists. The growths which are attached to her ankles—she really has none; I use this term to denote location—have shrunk in size until they look like raisins.

"I can sit by the hour to watch her. She is perfectly motionless for long periods, except for the blinking of her eyes. Then she will start moving her body and arms about slowly, flexing herself.

"To-day, as I was performing some tests at my bench, I heard an odd hissing sound behind me. It was a faint, steady sound, and its exact location was difficult to detect. Suddenly, the truth dawned on me. Her lips were moving. A new possibility suggested itself to me immediately. Perhaps I could teach her to speak.

"She has become rather listless during the last few days. I examined her, but could not find anything which would induce her tired actions.

"She grows more languid every day. I am becoming alarmed. What can be wrong?

"I am desperate. If her condition does not improve soon, she will die.

I have tried to feed her liquid nourishment such as milk and broths; but she spewed them out. I am almost certain it is a matter of insufficient nutrition. I examined her thoroughly. The action of her heart and lungs has weakened measurably. I noted that the growths of her ankles have disappeared altogether. Evidently, they furnished her with nutriment.

"It might be a lack of proteins. Since she refuses to take food through her mouth, they would have to be assimilated by her through the soil. In order to provide for quick assimilation, I had to prepare a liquid solution containing a high percentage of proteins. I checked a list of probable fluids. None of them was ideal. Then it flashed on me—animal blood. It was rich in proteins and easily taken up by the soil. Hastily, I killed some chickens and sprinkled the blood on the soil. Anxiously, I awaited results. They were quickly forthcoming. Even a few hours later, she appeared to be more lively; and in a week's time she was as well as ever.

"I am trying to teach her to speak by means of association of ideas. I point to some object and repeat its name many times. I shall find it hard work, as her voice is more of a whisper than a full-throated sound.

"She is now three feet in height. I transplanted her to-day. She had been planted in a box which stood on the laboratory floor. I made a large circular container from concrete, pouring the mixture directly on the concrete floor. I then filled this circular space with the proper soil. It took most of my strength to carry her, box and all, to her new home.

"She is learning to speak. Her voice continues to be a whispering

sound as she is unable to impart a resonant sound to her vowels. As soon as she is able to speak, I shall publish the results of my experiment. It needs little imagination to visualize the uproar which will follow my revelation.

"I CANNOT describe my feeling toward her. She is more to me than the result of an experiment. I think I can best describe it by comparing it to the affection one holds for a beloved pet. Such an emotion is totally unscientific; but I cannot deny its existence. Again, this feeling is the only one which stands forth clearly from a shadowy background of strange disquiet and faint revulsion.

"She is growing rapidly. To-day, while I was sprinkling the ground with blood, she appeared to sniff the air appreciatively. An investigative spirit prompted me to put a few drops on her lips. For the first time, she seemed to display real emotion. She uttered a number of words, jumbling them together regardless of meaning, and, clutching the fluttering fowl from my hands, brought it to her mouth. As a doctor, I was pleased; as a man, I was repelled by the disgusting sight.

"She is almost as tall as I. I sat in the laboratory, studying her, debating what course I should follow. My experiment is completed. I should announce it to the world. But I realize what that would mean. Hordes of doctors, reporters, students, pests of all descriptions, would descend on me to destroy my peace. Aside from that, I have grown very much attached to her. I could not bear to see her subjected to the morbid gaze of curiosity seekers.

"I must attempt to analyze my feelings. I have developed a habit

of sitting in the laboratory, without either observing her or performing any experimental work. Apparently, I sit there just for the sake of her company. I detected myself in thinking that I really considered her to be beautiful.

"Whenever she eats, I am forced to turn my head. I bring her live chickens, rabbits, and ducks, which she clutches from my hands with wolfish avidity. At such times, I cannot describe her as anything else than an animal.

"She still grows. A frightening possibility has presented itself to me. What will happen, if she continues to grow? She is now as tall as I, and—I am sure—much heavier and stronger. I am beginning to worry about her growth.

"I never suspected her tremendous strength. I put my hand in hers and pressed it by way of suggestion. She returned the pressure with such terrific force that I cried out with pain. Every bone and tissue of my hand was so badly bruised that it has swollen to twice its normal size.

"She fascinates me. Her large, brooding eyes follow me wherever I go within the laboratory. She makes quick, impatient movements when I pass by her, as if she wanted me to stay close to her. But I have grown wary of her strength and keep out of reach.

"She exerts a bewitching influence upon me. The large eyes, their pink pupils, weave a hypnotic spell about me. The full, sensuous lips, crimson as the blood which nourishes them, beckon to me. Her body, so strong, so beautiful in its very suggestion of power, exercises an irresistible appeal to my senses. If only — What am I saying, thinking? What is wrong with me? Am I going mad?

"A TERRIBLE thing happened to-day. It may appear grotesque, even ludicrous, to others, but to me it is terrible. As I passed by her, I suddenly found myself clutched within two hands which held me like a vise. They spun me around like a top, so that I faced her. Sinuous arms coiled about me, drew me closer with irresistible force. I struggled, I cried out in exasperation. Then, becoming alarmed, I screamed in utter fright. Inexorably, I was pressed against her body. Red, lascivious lips hovered above mine. Her powerful embrace roused long-forgotten instincts within me—instincts elemental as nature. Reason left me. Long pent-up emotion broke through walls of restraint. I kissed her fiercely, passionately, again and again. I forgot all—all but the wondrous creature in my arms.

"I cannot sleep well. An odd feeling of dread, some vague premonition of danger depresses me. Weird nightmares trouble me. I awake in the early hours of the morning, bathed in cold perspiration, and it takes every ounce of my strength to keep from screaming in sheer terror.

"I am neither sleeping nor eating. When I am awake, I realize the horror of my situation and my mental agony is excruciating. Sleep is but a mockery. Frightful shapes, awe-inspiring monsters gnaw my vitals, tear my heart, till, shrieking with fear, I return to the horrors of consciousness thought.

"The servants have left me. I cursed them for a pack of superstitious cowards. At least, I do not have to pretend any more. I can rave, if I feel like it.

"Immersed in a maelstrom of emotions, I have lost all interest in my appearance. I saw myself in one of

the hall mirrors. I saw a bony scarecrow whose deeply lined face was crowned with a mop of unkempt white hair. I taunted it with sadistic delight.

"So you are Igor Boronoff! The great scientist! Scientist? Bah! You are a fool! A fool, I tell you! A fool!"

"I saw him mouth at me. Enraged, I plunged my fist into his sneering face. A sharp pain shot through me. Stupidly, I stared at a badly cut hand.

"Oh, God! I was going insane!

"Whimpering, not at the pain which the hurt caused me, but at the realization of my horrible plight, I ran toward the laboratory to dress my wound. I stopped short at the door. No! Not in there! Not in there! Rather than enter, I bandaged the cut with strips torn from a shirt.

"I must do something before it is too late. But what? What? I paced up and down the library, rejecting one plan after another. I stopped. Why had I not thought of that before? Jim! Hard-headed Jim! He was the answer. He is my hope, my salvation. I shall write to him to come, so that I can explain everything to him. He shall decide for me. I have no more strength left to decide anything. I shall write the letter now while I am sane enough to do so.

"I have mailed the letter. Already I feel relieved. I must go now to feed her. Must I? Why not—No; I cannot do that! If I did, I would be more of a monster than she is. I will not add murder—such it would be to me—to my sins.

"I will not deny it any longer. I love her! I love her with all my heart, mind, and body. Again, I knew her embrace—I yielded to her—why should I lie? I courted it.

My actions may be vile, but I cannot help myself. I have lost my courage and self-respect. I will tell Jim nothing. He would never understand. His type of mind could not——"

THE DIARY of Igor Boronoff ended there.

I jumped to my feet. Horror, disgust, and rage struggled within me. I sat down again and wrote him that he no longer existed for me. I would denounce him for his vileness and have him barred from further practice of medicine, whose name he had befouled.

His reply was terse and insulting: "I thought you were a scientist. Instead, you are a fool. I should have known better than to trust you. I shall trouble you no more."

Like a nightmare which has passed, the memory of Igor's revelation had begun to fade. The pressing demands on my time had almost caused me to forget my experience, when I received a telegram from him. I tore it open and read: "Save me. Come at once. For God's sake don't fail me!"

With frenzied haste, I packed. My eyes fell on my revolver. I hesitated, then stuffed it into my coat pocket. I had an hour's wait till my train arrived. In mental agony, I strode up and down the platform. At last I sat in the train. I gazed at the moving landscape with unseeing eyes. I tried to read. I walked back and forth on the train, smoking incessantly. Despite all my fidgeting, time dragged interminably.

Small, dark clouds rolled up in the sky, obscuring the evening sun at intervals. They scudded swiftly, presaging a storm. Dusk approached, turning quickly into darkness.

I descended at the tiny station and hurried to a garage. Its owner, who lived above it, came down to answer my call.

"Yes, suh! I'll rent you one. The cah's kinda old, but it's in good shape. The road——"

I cut him short, left a deposit, and jumped in the automobile.

The headlights bored into the darkness ahead of me, illuminating the narrow, bumpy mud road, over which I flew, disregarding the severe jolting. Frequent flashes of lightning revealed the tops of trees bending in the strong wind. The rumble of distant thunder came to my ears. Large drops of rain tapped on the top of the car, then ceased again. The moon sent a pale light over the forest, then, disappearing behind the clouds, left utter darkness.

Suddenly, I became conscious of the gateposts at the head of the drive. A glance showed that the gates were open. I careened between them as I roared down the drive. With a jerk, I stopped at the entrance of the house and ran up the steps. The house was dark; no sound came from within. I rang the bell repeatedly, but received no answer. I pounded on the door, screamed Igor's name. The house remained dark, silent. I tried to break through the door; but the massive oak withstood my strongest efforts.

I ran around one side of the house, screaming. The storm whipped the words from my lips; the thunder drowned my cries. Frantic, I dashed to the back of the house. Lights showed through the partly drawn shades of two windows on the ground floor. I was weak with apprehension; my legs trembled as I ran toward them. I tried the windows, but found them fastened. I

broke the panes of one window, lifted it, and jumped inside.

A large, marble-topped bench, fitted with racks which contained numerous bottles and laboratory equipment, obstructed my view of the center of the room. Against the wall to my left, I saw a long white table. On it stood a Bunsen burner, whose flame heated the contents of a metal vessel. Dense, yellowish fumes, which forced me to cough, steamed from below the cover which was clamped to the container. I ran toward the table to shut off the flame. As I passed the marble bench, I gained a clear view of the laboratory.

STARK HORROR froze me to the floor. A frightful sight held my eyes. An immense, female creature held Igor in a terrific embrace. His eyes protruded from their sockets; his head was twisted into an impossible angle. His arms were straight, stiff as iron rods. The hands were clutched tightly into fists, the whiteness of his knuckles attesting to the convulsive strength which had clenched them. The legs were drawn up to his body in a knot. Igor's life had been crushed out.

She dropped his body. Red eyes stared at me. Her hair, which was almost white, tumbled about her heavy shoulders. Her massive body was like an enlarged living model of some ancient, evil goddess. My horror grew as I observed that her legs joined at the ends into a *corrugated, greenish trunk* which pierced into the earth beneath her. She was diabolically beautiful, elemental, evil, foul—yet drawing something within me toward her with irresistible fascination. She uttered strange, sibi-

lant sounds. Her arms wove in the air, coiling and twining like living snakes.

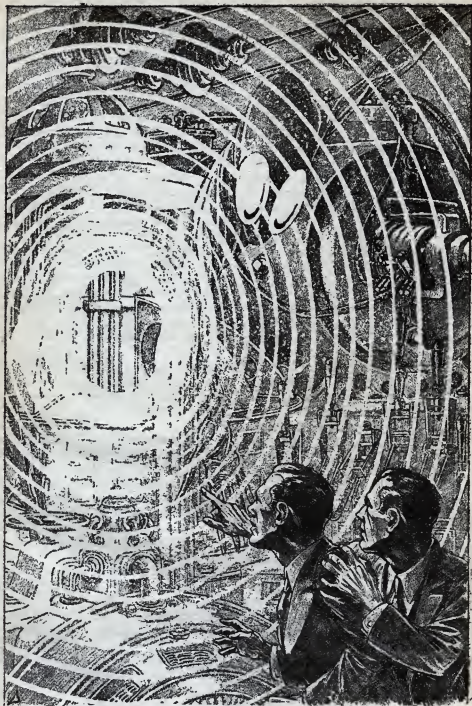
Her movements broke the spell. An insensate fury overwhelmed me. She—this was the thing which had broken my friend, his mind and body. The crash of my revolver rang out, again and again. My finger continued to pull the trigger till the click of the hammer on empty shells brought me to the realization that I had emptied the gun. With an inarticulate cry, I flung myself through the window, into the wild storm.

Lightning, thunder, rain, raged about me as I stumbled along. The cool rain brought me to my senses. I decided to return to the house. A faint red glow showed through the trees at my right. It puzzled me for a moment. Then I disregarded it and kept on in the direction in which I assumed the house to be. It was not long before I gave up. I had lost my way.

The glow had heightened till it painted the scene about me with a dark-red color. Sudden realization of its true meaning came to me. I remembered the fuming vessel. The house was on fire. I must get Igor's body. I thrashed through the woods, stumbling, falling. Branches of trees whipped blows to my face. Now the woods were brightly illuminated. Finally, I reached the clearing around the house.

The house was in flames. I was too late—

I cannot tell what happened after that. I do not know how I left, nor how I reached home. There is a blank space in my life I shall never be able to fill. Perhaps it is better so. It may have saved my reason.



As they stared at the vast, hazy machinery, concentric circles of brilliant colors began to emanate from the creature hovering near by.

The BRAIN of LIGHT

A Thought-variant Novel

by John Russell Fearn

I AM QUITE convinced that the new radio and television system will leave all the present systems entirely in the shade," declared Max Forsythe. "My father began the experiments in his early youth, and now that he has gone my friend and I are finishing the task. In a month, maybe even less, my machine will be ready for public demonstration."

"Anything further, Mr. Forsythe?" inquired one of the group of reporters, gathered around, scribbling notes.

"No; the technical details I reserve to myself. That's all, boys—boost it up!"

"We will! Thanks!"

"Good morning, Mr. Forsythe."

Talking amongst themselves, the reporters filed out of the luxurious New York apartment.

Max Forsythe, thirty-two, radio engineer and scientist, stood considering for a space, a faint smile on his pleasant face. Then he crossed to the bell and pushed it.

"Lawson, I'm going to the laboratory," he remarked, as his manservant entered. "Miss Walford will be here for lunch—so, you know what to do with the oysters."

"Indeed yes, sir. I'll have them prepared in ample time. Shall I show Miss Walford into the laboratory?"

"Yes; you might as well."

In a moment Max was in the long laboratory adjoining his flat, gazing fondly at the apparatus in which all

the hopes of both himself and his friend—Robert Walford, brother of his fiancée—were placed. Simultaneous radio and television waves, insuring perfect synchronization.

With the air of an expert he tightened up a terminal and looked about him at the massive power machines and generators.

"Since light consists of an essentially basic electromagnetic property, and sound also, I don't see anything wrong with the idea," he murmured, half aloud. "And the converter makes up for the difference in the rates of speed between sound and light—the former at eleven hundred feet a second and the latter at one hundred and eighty-six thousand miles a second—the converter making them both equal in basis, or at a fixed radiation of ninety-eight thousand to the second—"

"Quite so!" interjected a feminine voice solemnly.

Turning, the young scientist beheld Ada Walford advancing slowly down the laboratory. There was a faint twinkle in her blue eyes as she absorbed something of his intense earnestness.

"Hello, Ada!" he exclaimed genially, going over to greet her. "Just expounding to myself; sort of helps to clear ideas up, don't you think? You perhaps know the principle of ordinary television—radiation of energy, photo-electric cells, and all that. But this system is different, different even from the original idea dad conceived, now that your

brother and I have been busy on it—him in particular. The only thing that really troubles us is the confounded Heaviside Layer. You see, but for that we might be able to reach even Mars with our radiations; as it is our new ultra-short carrier wave will only pierce the Heaviside Layer and lose much of its power in doing it, causing the carrier wave to peter out when only halfway through space to Mars. Then, again, there will be the old trouble of fading."

"Yes," assented the girl solemnly, but still half smiling. "The Heaviside Layer—I know it causes fading in radio, but that's all I do know."

Max wrinkled his brow. "I had thought of an annihilator beam being incorporated in the carrier wave, a sort of invisible beam of pure force that would destroy the atoms and protons within the transmitting beam. That should stop static and fading. You see, static from the Heaviside Layer is caused by the free movement of the atoms and protons, which——"

"Stop!" Ada gasped, feigning to reel giddily. "You know all about it, and when you get going you're like a steam engine. Ease up, can't you? I'm not hot on protons, you know. Which reminds me, how does this old thing work, anyhow? You're mighty secretive, and so's Bob. I might as well try to open an oyster as get him to speak."

Max laughed. "All right, I'll give you a demonstration—and, talking of oysters, we'll have some for lunch; I know you like them. Now, this machine is like advanced beam radio. Don't you see that the constituent light emanations of the original object, when projected by this television carrier wave of ultra-short length, will be bound to re-

sult in the actual image at the other end, where the receiver is?"

"Ah-ha, I see that. But won't it take an awful lot of light to do it?"

"Yes; but we draw our supplies from solar light—daylight. It's the only light which is capable of giving the ultimate of illumination, which I need for this process. As for the sound, that's not difficult—purely a matter of stepping up the volume of the actual sound energy dissipated into the air, so that the original sound has all its power when it arrives at the receiver. It must be understood, though, that the radiations of sound are transmitted; sound itself, of course, would fade—indeed stop altogether—if projected into space. I'll demonstrate the transmitter to you. We have no receiver here, so you'll have to imagine that bit."

There came the clicking of switches and buttons, and the entire laboratory suddenly became plunged into darkness as steel shutters closed across the windows and skylights. Dynamos and generators began to hum rhythmically—then from a lateral slit in a gray sheet of metal there suddenly stabbed a blinding beam of white light.

"Here, put these glasses on," Max cautioned, handing over a pair of tinted goggles. "This light when I get it going can destroy eyesight. Guess it leaves an oxyacetylene welder in the same class as a candle. Now watch!"

HIMSELF protected by violet goggles, Max increased the power of the beam, until at last a seemingly dimensional, solid bar of white searing flame existed between the lateral slit of the power-gathering machine and the radio-televisor transmitter. The energy crackled and hissed, strange roller-shaped bearings and

cogs span silently in thickly lubricated sockets.

"Pure light!" Max shouted ecstatically. "All about us exist the radiations we know as light, because our eyes are fitted to receive those radiations and interpret them. As a rule, light is diffused by atmosphere, but here we have the real thing—solar radiation—ultimate of light—the very stuff that makes the entire universe seeable at all! You understand? Radiant light?"

"Yes; I think so," the girl answered, her lips parted in excitement. Then suddenly she gripped Max's arm. "But, Max, who on earth could tolerate that light to have a picture of themselves transmitted?"

"Nobody has to, sweetheart. This is the transmitter for sending out the image, after it has been absorbed—or rather after its light value has been absorbed. You see, everything that is visible radiates light; this machine captures those radiations, after the object to be transmitted has been brightly illumined in order to make ultimate light value at the receiving end greater. Then this light beam takes the impressions and passes them into the transformer in the shape of a blinding rod of fire, such as you see. This in turn is passed on to the ultra-short carrier wave. See? Of course, we're not transmitting an image now, this is only a demonstration." He switched the power off abruptly, and daylight came in again. With a grin he pushed back his goggles and took the girl's pair.

"It's—it's marvelous, Max," she admitted. "Yet, somehow, it scares me. It's just the sort of thing you and Bob *would* think up. It looks as though it would explode."

"Oh, nonsense, Ada—just a fancy! But, say, let's get along and have

something to eat. The oysters are calling. Come on!"

Arm in arm they walked slowly from the laboratory, then at the doorway leading into the flat the girl paused and indicated a mighty shell of aluminium standing like a sentinel against the farther wall.

"What's that thing, Max? An antique?"

"Anything but, Ada. Dad once got the idea of building a space projectile on a small scale. That aluminium shell represents as far as he got. It's a perfect vehicle, complete with manhole and everything. The only thing it lacks is motive power," he concluded with a grin. "I just keep it there, in case some day it may be useful. But come on; I'm hungry."

A few minutes later they were partaking of lunch, looking out over New York from the high elevation of the apartment, Lawson silent and attentive in the background. The radio played softly pleasing music from a local station. Max glanced at the instrument, and a smile came to his face.

"Prepare, sweet one, to drink a toast to the most antique of all man's inventions—radio!" he exclaimed laughingly, raising his glass. "For so it will be, this time next week!" He rose to his feet in solemn dignity, hand holding the lapel of his coat, then the toast he was about to utter was frozen on his lips.

Cold, unreasoning terror swept up and engulfed him. For, silently, without warning, a sudden dead blackness had descended upon everything. Indeed it was more than blackness—it was the complete absence of all light. Rayless, void-like infinity. The tumbler dropped from his grasp with a splintering crash to the table.

"Heavens, I can't see!" he shouted

hoarsely, then something of the fear that he had been mysteriously stricken blind was relieved when Ada's voice came to him—and Lawson's.

"Neither can I, Max! Not a thing! Not even the window!"

"Sir, sir—what am I to do?"

Max made an impulsive step forward, forgot the table, and crashed into it. It overturned with the rattle of smashing dishes and glasses. He blundered about until he found the girl's arm; she was shaking with sudden fright.

"All right, Ada—take it easy!" he breathed. "Lawson, try and find the electric-light switch."

"Yes, sir—I'll try."

An interval of shuffling and scraping followed, muttered remarks, then the electric light flooded the apartment.

"Thank goodness for that!" Max remarked. "Obviously this form of light isn't affected anyway."

RELIEVED for the moment, the three sat down heavily, then, at a glance from each other, they moved to the window and looked out. There was nothing there—just that utter, incredible darkness, the glass reflecting back their images like a mirror. High noon, yet infinitudes blacker than midnight itself. Then came little lights—little spots of light moving in the void below like disembodied luminescent circles.

Then came the sudden hooting and blaring of auto horns, the whistles of factory buzzers. The radio continued its tune, then suddenly stopped dead as though the wires had been severed—not a crackle, not a hiss.

"What—what does it mean, Mr. Forsythe?" ventured Lawson nervously, his face puckered in troubled creases.

"I don't know—yet." Max stood grim and thoughtful, listening—he knew not what for. "Something is outraging all the natural laws of light emanation and refraction. Something that seems to be affecting even radio." He paused. The radio was gushing again with power. Such power! He never knew there was so much.

"Creatures of Earth—take heed!" commanded a voice, a full, round-bodied voice, it seemed. "In particular may the beings known as Max Forsythe and Robert Walford listen to our words—or, should they not be listening to their radio, other beings must convey the information to them. This day Max Forsythe has hurled into the world of light-beings a battering-ram of fire and destruction. It must cease. Be warned! Thousands have been destroyed by his action. We have it in our power to give you light or dark at will. This time we are tolerant; we have stopped only daylight—further assaults upon us will mean stoppage of *all* light, indefinitely. Our walls, the walls of our world, were riven apart to-day. To replace these walls we have absorbed light; that is why your world is temporarily black. Do not tamper with forces you do not—and could never—understand. Light, most of all. Again, be warned!"

The voice abruptly ceased, and simultaneously daylight returned as though an omnipotent switch had somewhere been depressed.

Max stood as though carved in stone for a couple of minutes after the voice had ceased, oblivious to the fact that the normal radio music was not resumed. Then, at Ada's touch on his arm, he awakened into life.

"Max, what does it all mean?" she

asked wonderingly. "What can it mean?"

"I—I believe I get it!" he answered, seizing her hands. "Yes; I'm sure of it! That radio-televisor —" His eyes brightened. "Ada, I've stumbled on a terrific discovery! Beings of light! But it's too big a problem to tackle alone—I'm not much good on physics and kindred subjects. It's your brother's job to help. Is he at home?"

"Yes, I suppose so. But what do——"

"I must have coöperation on this. Just a moment!"

Max turned to the telephone, and a manifestly worried, frightened operator gave him his number after two wrong attempts. The voice of Robert Walford came to him from the other end of the wire:

"Oh, it's you, Max? I was just going to ring you up. About Ada—is she with you? Quite safe? The blackness, I mean."

"Yes—yes, she's here. You heard that voice on the radio?"

"Surely. I was just listening and having my lunch. Something big here, Max. I'll be right over. Ten minutes will do it."

"Good! As fast as you can."

Max hung up, to meet the puzzled eyes of the girl fixed upon him. He stepped forward and patted her hand reassuringly. "Sorry—guess you're all muddled up, aren't you? Frankly, I'm a bit that way myself. This business is involved. You see, somehow my projecting a carrier wave of ultra-shortness has penetrated a hitherto unsuspected realm girt about the Earth—has, in fact, done a lot of damage in a little-known universe."

"Um—where the people talk good English, eh?" she asked suspiciously. "Max, I do believe that darkness business was just another

of your fool electrical stunts! You can make electricity talk to you, if you want. Tell me the truth!"

"It *isn't* so!" Max insisted. "I don't pretend to understand how the English language was spoken, but, after all, we'll probably find the explanation ultimately. We're up against something big, Ada—big! A world we never suspected. A world in *light*! Holy mackerel!"

He relapsed into thought at the immensity of the idea and remained thus until the calm, unmoved personage of Robert Walford, Ada's brother, entered the apartment.

Slim in build, Bob was five years the girl's senior—keen, unruffled, essentially mathematical, with a disposition as regular and even as a chronometer; an analyst and chemist of high repute and possessing an enviable name in the radio and electric world.

"Well, Max, what about it?" he inquired calmly, hands in pockets. "All right, Ada?" He tossed her a brotherly glance. "Not scared?"

"Of course not! Just—er—puzzled."

Max rose and took hold of the analyst's arm compellingly. "Bob, you know the principles of our radio-televisor—how it works—everything. You also heard the radio message directed at us. Now, how in the name of sanity does a new radio machine upset a plane of beings that seem to be made of light or something?"

"My dear Max, it is not an intricate problem to the trained mind. I call mine such; you are entirely creative. You're a genius—I am merely an expert evolving, as it were, on fundamentals. Obviously, there exists in light, that is in the *radiations* of light, a world of beings. We never knew it before, because we cannot see or hear them

with our eyes and ears, but that doesn't say they're not there. One cannot see with eyes above ultra-violet or below infra-red, but that doesn't imply there aren't any other radiations above or below these spectrum limitations. Indeed, beings that exist in a world of light radiation are, after all, quite feasible—why not?"

"Go on, man, go on!" Max urged, and the girl and Lawson came closer.

"Well, as I see it, you must have used the televisior machine to-day."

"Sure I did—gave Ada a demonstration."

"Well, that being so, you dealt a double blow into this world of light-beings. For one thing you absorbed terrific quantities of the radiations we know as daylight, and for another you hurled forth into the heavens a new type of carrier wave, capable of easily penetrating the Heaviside Layer. So, it appears, while you robbed this unknown world of light, you also drove a battering-ram of power into it at the same time. Max, don't you see that that carrier wave would be *solid* to these luckless creatures of the light plane, existing, as they seem to, at such a high radiation? Suppose we could see radio waves, feel them; just think how upset we'd be if somebody hurled one at us! We'd just disintegrate before it. You get it?"

"With our new force we've smashed down what to these light-beings is a solid wall—to us a transparent wall of light vibration. They had to gather light radiations to repair the trouble, presumably, and this caused our world to be plunged into a momentary blackness. Then, again, our carrier wave obviously penetrates these walls and annihilates the creatures. So, instead of

making a machine to serve our race, we've found the destroyer of another race. Most remarkable, indeed!"

"But, Bob, the voice in English—speaking on the radio! That gets me!"

"That I can't explain yet—though, of course, it is possible to speak without even uttering a sound."

"Yes, thought-conversation into sound." Ada nodded. "I've heard of it."

"On the contrary, dear girl, light can be made into sound. It is done in every talking-picture theater to-day by the photo-electric cell. But we will not pursue that topic. It is even possible that certain colors, properly converted, can be turned into audible sound."

"What!" Max gasped. "Say, you don't mean it, man!"

"Entirely correct," the analyst insisted. "It can be done, but for the time being we have other things to engage our attention. We've got to decide how to use our machine without disturbing these light-beings. We don't want to harm them, but all the same we must give our invention to mankind. Guess I can be better employed here for the time being instead of at my laboratory."

"You'll stay? That's great of you, Bob."

"Not at all, but first I require lunch. I didn't finish mine. What have you got?"

Max glanced at the overturned table. "Oysters, if you like 'em. I'm sure there are more. If not, plenty of other stuff in the kitchen."

"Lead me to the oysters; I adore them."

II.

DESPITE its brevity, the disappearance of daylight proved to have far-reaching effects. Several ships

lost their courses at sea, airplanes crashed, automobiles collided—countless little incidents occurred that brought home to Man the realization of the absolute necessity of light in order to exist. Only the fact that artificial lights had not been affected had made the happening less serious than it might have been.

Thousands had heard the radio message, with the result that Forsythe and Walford found themselves suddenly the butts of innumerable interrogations. It was demanded by the public that they destroy their "newfangled" invention—a demand to which Max might even have acceded, so fierce was the insistence, had not Walford stepped into the scene and issued a flat refusal. The invention would have its first public demonstration in the near future, and nothing should stand in the way, for by that time something would surely have been found to prevent the harmful effects on the beings of light.

And with this the public, for the time being, had to be satisfied.

In Max's laboratory, work was unceasing—the three working at full pressure to devise a means of rendering the radio-televisor harmless. With the keen genius of Max, the concise reasoning of Walford, and occasional assistance from Ada, plans were built up—splendid, perfect plans—but unhappily it was found each time that the most vital factor could not be excluded. The set would not work without that ultra-short carrier wave.

"If only we could detect these people!" Walford muttered, scratching his head and looking over the apparatus. "Some way to communicate. Glean some idea of their standard of intellect. We might then compromise."

"Perhaps we'd better not use the apparatus after all," Max said worriedly. "I don't want to upset these light-beings—and yet——"

"Forget it!" Walford snapped. "We're going through with it. I'll tell you what to do; give the machine another trial, but cut down your light-absorption percentage and carrier-wave efficiency. We'll see if darkness comes again and have to chance the trouble to Earthlings. There is always sacrifice in pioneering. Go on—give the thing the juice."

Silently Max obeyed, and presently that terrific stream of light was again in evidence, with the faintly visible beam of the carrier wave projecting from the transmitting lenses. Even though the power was cut down quite fifty per cent, the glare was blinding.

"O. K.," Walford muttered. "Shut it off." He rubbed his eyes and then stood and waited for something to happen.

A dead silence followed when the generators had ceased to hum—then suddenly the incredible happenings of the last experiment were repeated—but with something else besides, of which Max and Walford were then unaware.

Darkness, rayless and complete, shut down. The moment it did so Walford switched on the normal radio and the electric light. Then he stood open-mouthed, even his calm shaken. For his sister, Ada, had completely disappeared.

"Bob, she's gone!" Max shouted simultaneously. "Quick! Where is she?"

"I—er——" For once the analyst was at a loss for words. His gaze shot up and down the laboratory, to the black square that was the main window, and then back to his friend's baffled face. He took an

uncertain step forward—then the dead radio behind him awoke to life.

"Max Forsythe—Robert Walford, you were warned before not to attack our universe. You have ignored that warning. Either you destroy that machine, never to rebuild it, or else lose the solid creature called Ada Walford, who is now with us imprisoned. Do as you are ordered, and she will be returned unharmed—otherwise your world will be perpetually in darkness, and the life of the Earth-girl forfeit. You will have the full manifestation of our power in the world you are presently to view, for as a warning, until you see reason, we are *destroying all color!* You have twenty-four of your hours. We shall see if you can be sensible or not."

The communication ended and the blackness vanished simultaneously. Incontinently the two rushed to the window, to gaze astounded at what they beheld. The world was entirely in monochrome. Not a color anywhere! The formerly blue sky was gray—even the sunlight. The people in the streets, moving again now, the autos, the street cars, everything—gray. Like a three-dimensioned film.

"Great heavens!" Max breathed hollowly, clutching the window ledge convulsively. "Bob, do you begin to understand what we're up against?"

"Surely!" The analyst's calm tone was a fortress of strength in that moment. "We are up against creatures who understand light, color, and sound as far ahead of us as we're ahead of Neanderthal man. A monochrome world! And—Ada!" He compressed his thin lips into a bitter line.

"There's nothing else for it but to destroy the damned machine!" Max blurted out, picking up a massive

girder wrench from the floor. "We can't lose Ada——"

"Wait! Stop!" Walford insisted abruptly, and Max turned to find him on his knees at the spot where the girl had been formerly standing. Suddenly, as he placed his hand on the concrete floor, he withdrew it with a muttered curse. His eyes were shining with an unusual light as he looked up.

"What?" Max asked, lowering the girder again.

"This concrete, in a circle of about eight feet diameter is positively hot! See you keep clear of it. Like being under sunlight concentrated through a magnifying glass. Calorific rays—or infra-red. I'll bet my boots on it."

"So what?" Max inquired, puzzled.

The analyst straightened up. "Just this, Max. If there's an infra-red or calorific beam being projected into this laboratory from somewhere we'll detect it by photography, find its comparative wave length, and then think up something capable of traveling *in* that radiation—and so probably reach the source of it. And that'll be the domain of the beings of light."

"But—but——"

"Don't but, man. Help me get the infra-red cameras to work."

WITHIN half an hour the plates had been developed in the special dark room, and somewhat to the amazement of Max, distinctly revealed a beam of about seven and a half feet diameter projecting downward into the laboratory from somewhere above.

"Excellent!" Walford remarked concisely. "Naturally, infra-red travels through glass and wood, so the roof is no barrier. I should say this ray is not quite infra-red, but

possessing similar properties, having a wave length of approximately forty-five millionths of an inch. Naturally, the waves possessing the greatest calorific value are some little distance in the infra-red region. You appreciate, Max, that infra-red waves, and kindred ones, are not hot of themselves?"

Max nodded. "Yes—it's the objects they touch that absorb the heat, isn't it? Like you said about your hand under a magnifying glass concentrating sunlight. It is not the light that burns, but the frightful power of infra-red brought to a focus?"

"Exactly so—witness the hot concrete. That proves that Ada was removed by a machine of some sort—something that doesn't get hot, otherwise she'd have been burned unmercifully, and the light-beings have assured us that she hasn't been harmed—yet. Max, what we've got to do is put our brains together and within twenty-four hours devise something that can travel in that beam to the source. No; don't ask me why they've left it on; I don't know. Yes; we've got to think of something!"

"But what?" Max asked helplessly. "It's so enormously difficult!"

Walford considered, pacing back and forth in deep thought.

"Ships can be controlled and moved by radio vibrations, and that's got to be our fundamental. We must find something capable of exerting a recoiling pressure on the vibrations of infra-red—we'll call the beam infra-red for convenience. Get that?"

"Just the same as ether is the carrier-sea or vehicle of electricity?"

"Exactly so! Our beam must be the carrier of the recoil principle we

devise. Now let me think—let me think."

For a long time there was silence, then at last the analyst snapped his fingers decisively in the air.

"Our machine must be made of ordinary metal—a light metal—for the basis, and painted on the exterior and interior with a solution of alum and calc-spar, both of which, particularly the former, are opaque to heat or calorific waves. Then, to move in this infra-red beam, we must have an absorber of dead-black material, which absorbs heat the fastest and the most efficiently. After that, we must radiate these absorbed heat waves onto a highly polished surface placed some distance *behind* our proposed vessel.

"This, as I see it, if in proportion to the mass of the ship itself, should result in the vessel's moving forward in the beam itself, by the recoil of the absorbed infra-red vibrations upon the brilliant surface of the propulsor. Get it? Just as light waves gathered in a condenser can, if hurled at a brilliant surface, actually slightly move the condenser itself by recoil. I've proved that already in my own work, and infra-red waves being longer are a darn sight more powerful. Light has mass—so also has infra-red, to an even greater extent. Max, it's a great idea!"

"The idea's all right, but we can't do it all in twenty-four hours!" Max protested.

"On the contrary, I think we can," was the analyst's calm reply. "While I've been explaining to you, I've been looking at that aluminium shell you've got over there—that unfinished idea of a space ship, complete with manholes. It's the very thing we want. We may be a bit cramped, but that's nothing. Come on, give me a hand to get it ready.

We'll want a roughly made control board to stop or start our radiations at will. Then air supply, and so forth. Now—to work."

SIX solid hours of work in a laboratory bereft of normal colors, to the eye at least, resulted in the completion of the roughly constructed infra-red projectile.

"Not exactly a beauty, but serviceable," Walford commented. "We're going to take our lives in our hands, Max, but for the sake of Ada we've got to. Certainly we're not going to destroy our invention just because these creatures demand it. We——"

He stopped and snatched up the telephone as it rang noisily.

"No; we're not beaten yet," Max heard him answer. "The monochrome world? Well, you can find your way about all right, can't you? What? No—got an experiment on. Very important. Tell everybody that everything will be all right. . . . Of course color will come back! Good-by." He slammed the receiver back. "Institute of Science," he tossed out. "Want to know the reason for the return of the darkness, and the gray world. Folks are getting their backs up at us. Have to chance that, though. Now, to test this masterpiece. Better pack some goggles, a couple of rifles, and provisions. Never know what we may need."

This took another fifteen minutes; then, all arrangements having been made with the completely understanding Lawson, the projectile was levered by overhead cranes into the hot area that marked the presence of the beam. The heat was blistering in the brief transit from the laboratory to the projectile's interior, then the coverings of alum and calc spar solution brought complete com-

fort. They found it necessary to lie down at full length.

A tiny battery-driven light came into being.

"Say, what about the laboratory roof?" Max asked, after he had screwed up the air lock, and the ship was thus perfectly sealed.

"Since the laboratory roof is mainly glass, I suppose we'll go through it. Then—well, Heaven knows where. Somewhere in the region of the Heaviside Layer, I imagine. Switch on the propulsor, I'll work the absorber."

Max moved his hand up to the switch on the roughly made control board and pushed it home. Simultaneously Walford moved the switch for uncovering the black absorber. Although the two could not see outside, there being no windows, they distinctly felt the projectile jump; a momentary impact followed, then a hazardous sensation of upward flight. Acceleration presently began to tell upon them, weighing them down with its sickening pressure—and proving one indisputable fact. They must be going an amazing distance away from Earth.

Then very gradually the acceleration diminished to a constant velocity, leaving the two as weightless, floating beings, hardly able to exert the force necessary to move their levers.

"Cut out the propulsor," Walford said at last, and the closing switch moved into its sockets. The absorber also ceased to function.

"Better take it easy," Walford went on. "We don't know where we may hit."

The onward movement, impelled by the initial momentum, continued, until suddenly they became aware that gravitation had been mysteriously resumed. They lay on the floor, sensing an attraction practi-

cally similar to that of Earth itself. Then came a sudden jolting concussion, and the projectile became still.

The two looked at each other doubtfully, then Walford began to unscrew the air lock carefully. In another moment the air was hissing out of the chamber, until, completely exhausted, a thinner, different air came surging in. Cautiously he peered outside, his breath coming in short, panting gasps, then easing into steadier action as his lungs became accustomed to the change.

"Remarkable!" was his comment at last, and with that he wormed his way out onto a comparatively solid, white, and misty ground. "Look! An endless plain of white! No horizon—or if there is one it's hidden in mist. Now, I wonder where the deuce we are?"

Max scrambled out beside him, remarking that the air was curiously warm, and that there was a vague effect of sunlight, even though the luminary itself was invisible. Breathable atmosphere—gravitation—but nowhere a sign of a habitation.

Walford shook his head. "I can't begin to imagine where we are," he muttered. "The sun seems to be shining somewhere behind all this mist. The heat beam, too, must have come from here, and yet—" He stopped dead and seized his friend's arm tightly.

Quite suddenly there had begun to appear in the emptiness a vision of machinery—great engines and intricate mechanisms that baffled understanding. Gradually, with the passing seconds, the vision took on solidity, changing from phantomic transparence into three-dimensional solidity, until at last the two Earthlings realized they were within a vast, super-scientific laboratory, or else a power house. Their minds, struggling across blank infinities,

tried to piece things together—and failed. They felt like children before a mental Titan.

"What machinery!" Max breathed tensely. "What sort of science is it that can play about with stuff like this and make it appear and dissolve at will?"

"When I said we were up against beings who understood light, color, and sound, I did not bargain for this," Walford replied, compressing his lips. "It's—superhuman!"

"You were right in assuming that the calorific, or heat, beam came from here," a voice appeared to remark, at which the two spun round on their heels to behold an immensely lofty, quasi-attenuated creature standing behind them—quite twenty feet tall, with legs that seemed to merge into vaporous nothingness.

A ghost of an arm seemed somehow to be controlling a massive, but peculiar, lever. The Earth beings could make out eyes, large, deep-purple orbs, peaceful in their expression, yet seeming odd on account of their having no lids. The face was purely a haze; of mouth, nose, or ears there was no sign, and yet the Earthlings understood him perfectly, just as though he had spoken in a clear and understandable voice.

Walford was pondering upon the peculiar means of expression, when suddenly the being began to emanate an amazing aurora of color-bands, concentric circles of countless colors that radiated outward and then faded. Yet, as the two Earth-men stood there, the colors passing through them, as it appeared, they again heard words.

"It is because you have revealed yourselves as creatures of unusual knowledge that you have been permitted to come here," the "color

bands" said. "Your idea of the infra-red machine, according to our master, was quite original. Please realize that, although you on Earth may be masters of chemistry and kindred subjects, you have nothing of our knowledge of radiation, light waves, and color. You see, actually our world is invisible to such eyes as yours—it exists in a series of wave lengths some distance above ultra-violet, but we have machinery for altering our spectrum position, machinery which lengths the wave lengths of our emanations, thereby finally bringing us down to human visibility. This has been done by the orders of the master, so that you might see us."

"Thanks—that's good of the master," Walford remarked, and it was obvious his words were heard by the earless being; perhaps by absorption of sound radiation, he decided.

"Before I take you further," the being continued, emitting a further series of glorious colors, "please realize that we have done much to make this plane of ours suitable for your type of life. We have manufactured an atmosphere, which ordinarily we never need, we have also supplied our light-vibration floor with magnetic impulse to create for you a gravitation. But you are surprised at all this? Little wonder! I am trying to help you by explanations, for I doubt if the master will feel disposed to say much; he is angered by your interference. I may even tell you that the floor of our world, which you see as a hazy, artificially gravitated curtain, is actually what you know as the Heaviside Layer."

III.

THE extraordinary being paused, a hazy figure amid the enigmatic engines and controls of the power

house, then once more the color bands pulsated, and the apparent words came.

"This universe of ours is situated some one hundred and forty thousand miles from the surface of your Earth, and is the top side of your Heaviside Layer, the bottom side being roughly twelve or fourteen miles from your earthly surface and marking, as you believe, the approximate limit of your atmosphere. Therefore, the floor of our world is something like one hundred and thirty-nine thousand nine hundred and eighty-six miles in thickness. Being one hundred and forty thousand miles away we miss the orbit of the Moon by a full thousand miles. Our universe is entirely that of light vibration. We ourselves are children of light vibration, light of the third order, as we call it, for there are other light planes in the cosmos. Normally, we are composed of a light vibration so high that Earthly eyes cannot see us, and therefore pronounce space to be black. You attribute many things to your Heaviside Layer; you call it a form of energy, or a gas, highly ionized by cosmic rays, and blame it entirely for your troubles in radio transmission. Am I right?"

"Quite!" Walford nodded, while Max looked on silently.

"Radio waves, which to us in our normal spectrum state appear solid, are immensely destructive. At first radio did not trouble us a great deal, long waves harmed us but little. But then came the experimenters with their short-waved systems, which actually penetrated the floor of our world and wrought enormous damage. We found we could not, as hitherto, turn these waves back to earth with our repulsive floor. Even so, we were tolerant and allowed things to continue thus for a space,

but it was obvious our newly arrived master was angry.

"His fury burst in all its force when your new ultra-short-wave machine got to work recently and did terrific damage. This carrier wave not only split our floor, but killed hundreds of our fellows who happened to be in the way of the beam. Our walls, too, that girt us in from the void, were in some amazing way absorbed downward, the radiations of light surged away from us, obviously because of some light-absorbing mechanism on your machine. Light is not, as you would have it, infinite. It has a fixed source, and you nearly overstepped it—so the master was forced to blot your world out for a space."

"Granting you absorbed light from Earth, why didn't you use the Sun, the king of all luminaries?" Walford demanded.

"Because to do that would have meant drawing in certain heat rays as well, which we do not desire. The Earth is purely a cold, reflective agent. The master, with his instruments, detected by frequency the exact spot where the destructive beam came from. For a space he studied you in his machine, by the radiations of light you unconsciously emitted into the void—as do all creatures and things. He trapped the radiations of sound from your voices, heard and knew everything. Then he duplicated the same force you had hurled at us, and transmitted color waves into your earthly radio bands. These, by a process you will later discover, formed into words and gave you a warning. You ignored it; as a consequence the master ordered the capture of the Earth-woman Ada, and we have her here. The penalty for your last offense was the stoppage of all Earthly color."

"Yes, but *how*?" Max demanded fiercely, taking a step forward. "In the name of all sanity how do you creatures do these things? Capturing people by heat, and suchlike?"

"I am not at liberty to answer those questions," the being responded. "I would warn you that the master is unlike us. He is cleverer; nothing is beyond his powers of conception, at least in matter of light and color. We of ourselves are a peaceful race, wishing nobody harm—but our master is cruel, ruthless. It was I who allowed the calorific beam to continue upon the Earth after the capture of the Earth-woman, and it was I also who safely controlled your remarkable machine so that it arrived here unharmed. I wish you no ill; I only hope you may compromise. But that is for the master, the Light Brain, to decide."

"Light Brain!" Max gasped incredulously. "You mean—a brain of light?"

"Certainly; everything in this plane is of light. I must take you to the Light Brain—controller of our destiny, lord of the cosmos. Prepare, my friends."

THE BEING turned to the controls behind him and slightly moved the gigantic lever upon which his nebulous hand reposed. In response, accompanied by a deeply pulsating roar, the mighty power room began to disappear, and in its place merged another chamber, luminous gray, with entirely circular walls. In the center of the great place, suspended in mid-air by no visible means of support, reposed a perfect circle of softly pulsating light.

"Great snakes!" Max muttered. "This place gives me the creeps, Bob."

"I confess it has unusual charac-

teristics." Walford admitted, looking about him. "I am mainly puzzled, however, by the way in which places appear as they do without our moving in the slightest."

"A simple problem to masters of the spectrum, such as we," replied the color bands. "Remember that we are entirely in a world of only light impressions; nothing is really solid unless we bring it low enough in the scale to be so. Even the vibratory floor on which we stand is transparent in the ordinary way, through which you'd fall if I were to higher our spectrum value. This machinery alters the light radiations of different places, making them visible to the eye but cutting out one impression and bringing in another. Solidly it could not be done; by light it can: Now it is for the master, the Light Brain, to converse with you."

Unsteadily, bemused by all they were experiencing, the two Earthlings advanced toward the center of the hazy compartment, blinking slightly in the brilliant light emanating from the evidently intellectual globe. Then suddenly the whiteness of the glare died down and there radiated forth the now familiar concentric rings of color.

"You are intelligent creatures of your particular sphere, my friends; you have made an achievement, so you imagine, with your new radio-televisor. But it is my will that you do not return to Earth to continue your destructive work. There is no known way to stop the disastrous effects of your ultra-short carrier wave, and when you install your machines all over your Earth there will be wholesale destruction in our world. So it is, that to save ourselves, we must be rid of you. As for the machine itself, it will be destroyed by a heat beam of such

intensity that it will melt to liquid."

"This is outrageous!" Max exploded hotly. "You've absolutely no right——"

"Be silent!" the color bands commanded. "Do not try to match cunning with a brain that even speaks in color! Thoughts and colors are alike in fundamental basis—for each thought there is a component color. Colors affect the brains of Earthlings. The red color is analogous to a murderous tendency of thought—'seeing red,' I believe you call it. The colors we radiate affect your brain cells, but so finely are these colors graded by us, your Earthly eyes cannot detect all of them. You see all the range from red to violet, of course, but you do not see the five hundred and sixty colors that exist besides. Unconsciously you absorb these colors via your optic nerves, and they stimulate your brain cells into impressions, words, and these form into the only words that have sense to you—English. Were you blind, I could not converse with you, there would be no medium. Then you dare to match yourself against a brain of that power! Fools!"

"I understood you were a peaceful people——" Max began.

"The race is peaceful, but we are at the dictates of the master," radiated the attendant being. "I, for myself, am deeply sorry——"

"You dare to say that!" the astounding brain radiated. "Dare take sides with the accursed Earthlings! Know you that I am becoming suspicious of your rebellious ways and traitorous statements! This must cease. As for these two beings, take them away. Imprison them, until I have deliberated as to the best course to take to dispose of them."

"But just a moment——" said Walford, then he stopped as he be-

held the chamber and the Light Brain disappearing from view as the attendant being operated his lever once more.

This time a smaller place merged into vision, inclosed with four misty walls. Nowhere was there a sign of a door.

"Until the master decides, it is my unpleasant duty to have to do this," the being radiated. "I have no sympathy with his decisions; like all my fellows I hate him. I wonder sometimes if he really is one of us. His formation is somewhat different."

"Suppose—suppose we hit on a scheme to escape, would you help us?" Walford asked keenly.

"If it is a scheme that will ultimately destroy our dreaded ruler, yes," came the response. "We are crushed beneath his iron despotism. From nowhere has he come and so subjected us; being peaceful we know nothing of warfare. I have no grudge against Earthlings. If the master were removed we would surely arrive at some amicable plan with regard to your invention. One thing I will do; I will watch over your Earthly projectile and see no harm befalls it."

"Thanks for that," returned Walford gratefully; "but there's something else even more important to us. The very reason for our coming, in fact. Where is the Earth-girl?"

"Imprisoned, even as you are, awaiting the master's pleasure."

"Could you bring her to us? If we think out any schemes, we must all be together."

It seemed that the being considered; its purple eyes stared into vacancy. Then again the colors came forth.

"Yes; I will bring her to you. I can do so without endangering my

own position. The master will surely not discover it. So long as I have followed his orders in imprisoning you, it matters not whether you be together, or separate. I will send the girl to you."

"Great work!" Max exulted. "If we hit on a plan, how shall we let you know?"

"My name is Ramifod. Call my name; the radiation of sound you emit will reach me, and I will come. Now I must go—the girl will presently appear to you."

And with that the being and his machinery and lever vanished from view, leaving only the four-walled, hazy chamber, from which there was apparently little chance of escape.

THEN presently something merged out of the misty air, took shape. Instantly the two men jumped forward, seizing between them the now solid form of Ada. She embraced them eagerly in turn.

"Ada! At last I've found you!" Max breathed, holding her to him. "Thank God for that!"

"Are you hurt?" Walford demanded, at which she shook her head.

"No; not hurt, but I'm horribly frightened. At least, I have been until now. You see, when the darkness came in the laboratory, I seemed to find myself suddenly shooting upward. Oh, it was a terrible sensation! Then I seemed to lose all sense of everything—like fainting. That hazy creature, whom you've probably seen, told me by colors that I was covered by a magnetic infra-red shell. It had no bottom in it, and, it appears, dropped over me, something like a thimble over a garden pea. This shell was guided in the beam itself so as to fall exactly over me, my position having been determined by some

weird system of light radiation. So, the shell preceding the actual heat beam of a fraction of a second, saved me from burning.

"By the same process of magnetism the shell was withdrawn, my body stopping inside by automatic clamps which held my arms and waist. Then, upon reaching a certain point in the air, a peculiar sort of gas was released which placed me in a state of suspended animation—that was when I lost consciousness. So, my heart and breathing being stopped, and my circulation at zero, I was as impossible to kill as a corpse. Then I was revived and told to await the master's pleasure. That's all I know of the way I came here."

"H'm, your powers of memory are improving, Ada," Walford commented laconically. "The only thing that puzzles me is how the devil that shell got through the roof of the laboratory and left no break or gap to prove it."

"Oh, I forgot that bit!" the girl apologized. "The shell wasn't a solid thing, it was composed of some sort of light radiation, but impervious to heat. Something that goes through solids like a red-hot poker through snow."

"Ah, probably of the same consistency as the beam itself, only possessing no heat value," Walford murmured. "Most interesting—most!"

"And now what?" Max asked. "We're absolutely trapped by this glorified electric-light bulb that calls itself a brain."

"Beyond doubt the position presents certain difficulties," Walford commented and began to stroll about, stroking his chin pensively.

While he did so, Max explained to the girl how they had reached the realm of light and their subsequent

adventures. Presently he turned to Walford for corroboration of some detail—to start immediately with violent shock. The analyst was nowhere to be seen.

"Hey! Bob!" Max shouted desperately. "Where are you?"

"Bob! Yo-hoo!" called Ada, cupping her mouth and adding typical feminine sounds.

There came a sudden streamer of light from the farther wall, a strange writhing of mists, then the calm figure of the analyst appeared again. He strolled forward with a faint grin on his usually somber, cadaverous face.

"I hear you calling me," he quoted. "That bit puzzled you, didn't it?" He stopped as a gust of laughter shook him; then much to the astonishment of his friend and sister he doubled up in a paroxysm of uncontrollable mirth. "A—a prison!" he wheezed between gasps. "Of all the funny, foolish ideas! Why—why, the place is as easy to get out of as a fog belt!"

"What! What do you mean?" Max demanded.

"Just this," Walford replied, becoming serious again. "While you were talking to Ada I had a look around and found I could walk right *through* the wall! Don't you get it? These creatures imagine they have to deal with us as they deal with themselves. Being made of light vibration they are naturally imprisoned if surrounded by light vibrations which are stronger than they are—just as we can't walk through a brick wall. But, to us, the walls of this prison aren't as strong as tissue paper! Just mist!" He shook again with laughter.

"By Jove!" Max's eyes were brightly gleaming. "Of course! Ramifod said everything was light vibration——"

"Exactly, and we can just walk out of here whenever we want!" Walford turned to the wondering girl. "Say, Ada, why didn't you walk out of your prison?" he demanded.

"Well, to tell the truth, I—er—never thought of it," she answered a trifle sheepishly. "And neither did you at first," she added.

"Um—well, I guess I can't blame you for that. But now we're free we're going back to Earth to collect some apparatus, and then we'll return and give this Light Brain a few things to go on with. Since he won't listen to any plans for our mutual benefit we'll pay him back in his own coin. Come on; let's get going."

"We'll want Ramifod for that," Max answered. "Hey, Ramifod! Ramifod!"

There followed a pause—a long interval that suggested the call had not been heard—then very gradually there began to appear the hazy figure of the lofty light being amid his controls.

Quickly Walford made the position clear.

The color bands radiated in response: "Since you can so easily escape prison walls, there is nothing I shall try and devise to detain you. I'm glad you have found the means to escape; it will not involve me when I am called upon to explain to the master. Since you are determined to aid us against our despotic ruler, you have my allegiance. I will restore the calorific beam to its original position and safely guide your ship back to Earth. Then, I will await your returning—if that is your intention?"

"Surely! We're out to do a thing or two to this master of yours."

"It is well. I will guide you to your ship. Just allow yourselves to

be moved by radiation impulses, and all will be well."

With that the being vanished, and the trio stepped through the prison wall into the familiar gray, horizonless landscape. Immediately, as it seemed, invisible hands pushed them in the small of their backs, and they were forced along the plain at a steady walk. Vaguely they comprehended that the pressure must be occasioned by some form of light radiation akin to radio propulsory waves.

Presently they reached their infra-red machine, standing exactly where they had left it. They were contemplating it prior to entry when Ramifod appeared again, still with the vague suggestion of lever and control room about him.

"Exactly at this spot is the calorific beam machine which is being projected to your Earthly laboratory," the colors explained. "I have attuned the beam so as to envelop your ship and give you direct transit to Earth without damage by a forcible arrival. Now hurry, before the master learns of my duplicity."

"Good enough!" Walford answered promptly. "Come on."

They entered the cramping confines of the machine and closed the air lock. In a moment the controls were adjusted, and there came the sensation of downward falling. Once more acceleration claimed them for its own, and, as before, they were for a space weightless creatures; then Earth's gravity began to reassert itself, and they became aware of slackening speed, thanks to Ramifod's assistance and machines.

SLOWER the motion became, and slower, then with a slight jar the projectile came to rest. In another

moment the three were in the laboratory. It was night. Footsteps came, hurried and tripping, then, simultaneously with the electric light flooding on, the faithful Lawson entered, rubbing his hands in satisfaction.

"Ah, so you got Miss Ada back, sir?" he exclaimed happily. "I congratulate you, sir."

"You'd better reserve it until we finish the job off properly," Max replied grimly. "We've a lot to do yet, Lawson—unfortunately. Anything happened during our absence?"

"No, sir; the world is still black and white. You'll notice in here—no colors."

Max nodded slowly and glanced at the analyst. "Well, Bob, any suggestions?"

"I only know that we've got to work pretty fast. I want a few instruments capable of detecting light radiations and colors. And I've been thinking that there may be something in what Ramifod says about the infernal master."

"Meaning what?"

"He's not of Ramifod's third-order race. He's undoubtedly something different—both in form and mental make-up. Remarkable that creatures so diverse could exist in light vibrations. Anyhow, I'd take particular pleasure in informing that master precisely where he gets off."

"But, Bob, suppose something happens and the heat beam is cut off while we're here?" Ada asked worriedly. "It might, you know—if the Brain finds out."

The analyst nodded with the calmness that betokened the sudden release of ideas in his brilliant mind. "Admittedly it might disappear," he agreed, "but with what I have in mind it won't matter if it does. Now

we know the location of the light world is one hundred and forty thousand miles away; it doesn't matter how we get there; we don't need to use the heat beam. Briefly, it all boils down to a matter of space travel.

"You see, the highest altitude ever attained by an aeronaut—take Professor Pickard and his stratosphere experiments for example—didn't reveal the light world because it then existed in a spectrum beyond Earthly eyes' visibility. We know where the light world is, and by constructing a space ship, on the principle of recoil radiation—just as we incorporated in the infra-red machine—we can fly up there in the ordinary way until we reach the land beyond the Heaviside Layer. That is, granting they don't move it back to its normal position in the spectrum. If they do that, we're sunk, for we shan't be able to see them and we'll have nothing solid to land on. I'm trusting to luck our space ship will have force enough to penetrate their vibratory floor. So if they choose to cut off their calorific beam it's all—"

Walford ceased to speak. Quite suddenly the laboratory became filled with a rushing, tumbling surge of electrical power. Out of the air, it seemed, came a hard and familiar voice, accompanied by a staggering pyrotechnical display. The laboratory literally swam with reeling and beating color bands.

"So, you poor fools, you imagine you can overcome the master, do you? You would dare to tamper with a universe you do not understand? For that, you and all Earthlings shall suffer—nor will you be able to find our plane again because I have decided in face of your plans to move back to our original point high up in the spectrum scale. And

as for you creatures—destruction of *all light*! Nor will light ever be resumed! That is the answer of the Light Brain! You were warned! Every Earthling will hear this communication, for I have not resorted to childish radio, but to actual direct communication by color through space. Fools—childish, unutterable fools!”

The colors and voice ceased upon that; abruptly it seemed that an invisible hand had switched off the electric light. Those in the laboratory were in an intense impenetrable blackness. Not a spot of light; not the vaguest glimmer. Through the aching hush came the strident breathing of the analyst.

“By gosh!” he exploded at last. “Does he think he can get away with this?”

“He not only thinks he can—he’s done it!” Max answered testily. “This is a darn sight worse than before. He’s stopped all light of every description. How, we don’t know yet. Just a moment; I’ll experiment.”

There was a pause in the abyss, followed by the obvious scraping of a match and the spluttering of its flame. But no flame was visible. Astounded, Max felt along the match carefully, then yelped painfully as the invisible flame scorched his fingers.

“Hell!” he muttered direfully. “This is too much!”

“Wait!” Walford counseled, from the darkness. “That flame burned you—that shows that though visible light is somehow blocked, heat radiations are still existent. Very long waves aren’t affected, obviously. H’m, we can provide light for ourselves, vague and dim, by chemical means. Between chemical and actual light there is enough difference to prevent the former being

affected by this black-out. We had oysters for lunch, didn’t we?”

“Oysters? Yes—of course. But what in the name of sanity——”

“Say, Lawson, try and find your way to the kitchen, and bring me whatever oysters are left—the shells, anyhow.”

“Yes, sir; I’ll do my best.” There followed a fumbling and bumping in the darkness, followed by the creaking of the door.

“What’s the idea?” Max demanded. “Tell us, can’t you?”

“Sure! You know, beyond doubt, that ordinary daylight—solar light—and phosphorescent light possess two entirely different radiations?”

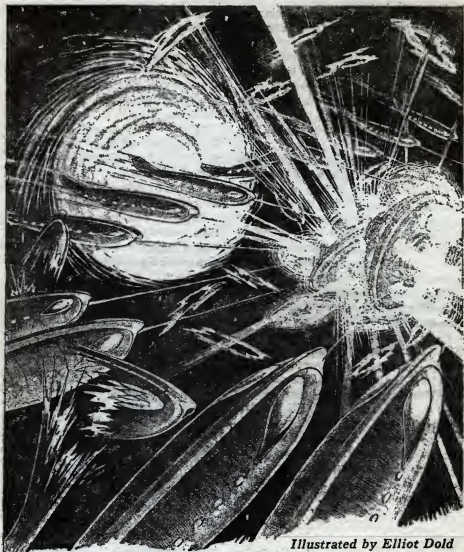
“Yes.”

“And also that fluorescence is a transient chemical light, and phosphorescence a persistent chemical light?”

“Cetrainly. But what——”

“If my reasoning is correct, the power that stopped normal daylight, or any artificial light, won’t block chemical light as well. By a sheer stroke of luck you happened to order oysters for lunch. Don’t you know the laboratory formula that oyster shells can be made into sulphide of calcium, by heating the shells to redness, mixed with a little brimstone, in a closed crucible? Small quantities of other materials, such as bismuth, manganese or copper, aid the production of a phosphorescence, and can also change the color of the light emitted. So you see, if we can make a quantity of sulphide of calcium—and you have the requirements in this laboratory here—we can have a feeble light of a phosphorescent nature. Then we can think further.”

“Yes, I recollect the formula, but I understood that the oysters had to be stimulated by light waves first,



Illustrated by Elliot Dold

and the emission of light persists after the light has been withdrawn."

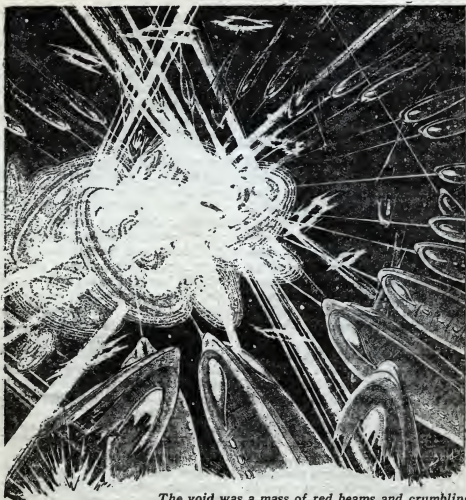
"Of course," the analyst responded. "But they *have* been stimulated by light until a few minutes ago. That's beside the point; there'll be enough in them for our job. Ah, I hear Lawson, I think."

Presently the manservant placed a salver in Walford's hands, and circumspect feeling revealed the oyster shells.

"Now—the crucible," Walford said, and Max led the way.

THEN began a series of difficulties, until the furnace fire was lighted, when, to their surprise, they beheld distinctly the red glow of the coals, but not the actual flames.

"Great!" Walford breathed. "The calorific and heat radiations are not affected, nor the low values of red



The void was a mass of red beams and crumbling whiteness as the fleets joined in titanic battle.

itself—just the higher spectrum values, that's all. It shows our phosphorescence will be O. K. Leave the furnace door open; we can see our way about dimly."

Work progressed slowly, and eventually the two scientists had completed their solution of sulphide of calcium. This they placed in a clear glass container, and set it on a bench where it would provide a fairly universal glow. It cast a pale, greeny-blue radiation, turning their faces green and their lips black.

AST-5

"H'm, we all look a bit bilious, but that can't be helped," Walford commented. "Now to get on with our original plans. I've got a formula to work out."

"But, Bob, what about the people, the public?" Ada asked helplessly, seizing her brother's arm tightly. "What on earth is going to happen in this darkness? A world without sight—that's what it amounts to. Not everybody will be able to do what we've done, you know."

"I'm fully aware of that, Ada,"

Walford answered calmly. "But because I can't do anything until I've worked out what's causing the trouble, I'm not bothering myself. Once I've found a way to circumvent this light stoppage I can carry on with the work of hunting up something to destroy this devilish brain. See if the phone is working, will you? I'll have a message sent over radio."

The girl found her way to the telephone, but all her efforts were useless. The line was quite dead. Regretfully she put the receiver back.

"Exchange not working. Everybody will be panic-stricken, Bob. We've got to do something to explain matters. Think of the casualties!" She crossed to the window and stared out on a black infinity. The infinite blackness of platinum dust.

"Everybody heard that warning from the Brain," Max remarked. "We can't do anything further. Don't worry yourself, Ada—it won't help."

"I'll say not," Walford growled, seated at the bench close to the phosphorescence container, scribbling busily. "Leave me alone, will you? I've got to think, as never before. Try and get some sleep—you'll do no good wandering around. Or you might try the radio. Never know your luck."

"Why not switch on our special radio and give these blighters a terrific blast that will blow them to hades?" Max demanded.

"No." Walford set his jaw. "I'd thought of that, but it would mean the destruction of all the race, and that isn't fair. No, I'll think it out first, if I can."

Max shrugged and turned to the radio. Switching on, the power was distinctly noticeable in the speaker; but no program was being issued.

Then presently even the power ceased to emanate.

"H'm, power station faded out," he muttered.

Walford turned slightly from his figures. "Nothing we can do can alter things," he said, in his cool, detached voice. "Now let me alone, please!"

IV.

AFTER a brief meal of tinned provisions in the light of the calcium lamp, Walford, a cigarette drooping from the corner of his mouth, returned to his figures, while Ada, Max, and Lawson looked on hopefully, hardly daring to breathe. Finally, however, as the time passed, the three spectators fell asleep one after the other, huddled in uncomfortable chairs. Walford, absorbed in his work, toiled on steadily through the night hours, flogging his mind unmercifully—figuring, computing, checking, with all the knowledge and reason with which he was gifted. Then, toward four in the morning, he jumped to his feet eagerly. With rapid movements he woke the others.

"I've found it!" he shouted, his calmness vanishing for a space. "Listen to this—and my figures absolutely check up on it. I've worked on the known basis that the dominant wave length of sunlight—daylight—is fifty millionths of a centimeter. This fact has made it possible for me to check up on all the remaining sources of light—electric, oil, and so forth—and determine the comparative wave lengths of each. Now, here is what the Light Brain is doing. From somewhere up there he is radiating a force which is capable of retarding the speed of light vibration. That is to say, everything we see, light itself, only appears to us be-

cause of the terrific speed with which the radiations strike the eye—the previous image having scarcely gone before the next one arrives, producing continuous vision.

"But—and here's what the game is!—this radiation is causing the speed of light waves to be slowed up; hence the waves only reach us slowly and indefinitely, resulting, in the case of eyes trained as ours are, in apparent blackness. You get it? The momentary split second needed for each wave to reach us is so spaced out, as it were, that we see nothing tangible in the time that——"

"But I thought these creatures absorbed light to repair their walls of light," Max remarked.

"I am quite prepared to believe they did so before," the analyst replied, "but this time it is a different matter. The Light Brain is obviously malignant. This light stoppage is not for necessity, but for revenge upon us. And remember, it will stay indefinitely. Not that that worries me, for having found the cause I'm quite sure I've correctly worked out the solution."

"Quick! What is it?" Max gazed intently at the figures on his friend's papers.

"Simply to issue forth from a machine, a generator, an electromagnetic energy slightly above that of the one being radiated at us. This will cause their light-retarding energy to be hetrodyned and render it useless. And, since I have the exact figure of the periodicity of the energy they're using, it won't be difficult. We shall want a generator like the one on that radio transmitter of ours; indeed, I think it can be converted for the purpose. You see, these creatures obviously can't use a retarding force low enough in

the scale to slow down the radiations of infra-red and heat—only the higher ones—sunlight, electric light, ultra-violet, and so on. You get the idea?"

"Sure! It's a masterpiece, if you're right."

The analyst nodded tiredly. "I'm sure I'm correct. Now I'm going to get some sleep; I'm about all in. Later we'll get busy converting our generator."

THE GENERATOR took two days to convert, working to Walford's plan. Fortunately, the electricity for driving it was provided by the laboratory's own resources; tappings of the normal mains had shown that the power houses were not at work. Indeed, it was doubtful if anything at all was going on in the black world. Few sounds reached the workers as they progressed; in the backs of their minds they wondered how much havoc had taken place in the interval of time. Sixty hours without light was unparalleled in the history of the world.

"I should think that ought to do," Walford remarked at length, carrying forward the newly mixed phosphorescence in its tube and looking the generator over carefully. "We'll give her the juice, and if my calculations are right, eight minutes ought to see restored daylight." He looked at his watch closely. "Normally, it is ten a. m., Friday morning. Now, let's watch."

"Why eight minutes, Bob?" Ada ventured.

"That's the time taken by light to travel from Sun to Earth," was the calm answer. "I'm calculating that light has been stopped clear to old Sol himself. O. K., Max, let her go!"

The switch moved into position

and the generator began to hum, gradually increasing in pitch as the speed accelerated, until at last the floor began to quake at the terrific vibration of invisible hetrodyning energy being hurled through the laboratory walls into the open air outside.

Walford stood with his eyes glued to his watch in the phosphorescent glow.

One minute—three—five— He bit his lip tensely. The others stood close by him in the faint, ghostly light. Seven—seven and a half, almost—

Then, suddenly, brilliant, blinding daylight! As though Earth had been inclosed in steel shutters that had abruptly been ripped aside. Light, sunlight, glorious and life-giving, stabbed into the laboratory. Immediately the four rushed to the window, to stand amazed at the sight they beheld.

New York, as far as they could see, was a mass of thick hoarfrost. A fairy city! Down below, automobiles were standing motionless, street cars loomed up like oblong islands in the midst of the jam. Pedestrians were strewn about the sidewalks, stiffened, frozen corpses. Nowhere was there a sign of anything moving.

Overhead the sky was clear blue and cloudless.

"Bob, you did it," Max muttered. "You've even brought back color."

The analyst nodded slowly. "Yes, I know. I can only hope I did it soon enough. Of course there would be terrific cold—condensation, you know. Good job we kept our heaters going in here. Everywhere there must have been rain precipitations, blizzards, and so forth." He aroused himself with a sudden effort. "Well, we've restored man's heritage; we can't do

more at the moment. To be safe, we must leave this generator going. By now it must have encircled the globe with its radiations—daylight and artificial light will be in order everywhere—perhaps weaker at the antipodes than here, but that can't be helped. We've done all we can. Still, I don't like the dead look everything has."

"Time will show who's left, Bob," Max remarked quietly. "What's our next move?"

"Obviously, we'll continue our original plan to launch an attack on the Light Brain. After this dastardly affair, it's the only thing left."

"I'm entirely with you there. You'll have to make those instruments you spoke of?"

"Yes; I think I can make them here. Of course, we're up against difficulties now the light plane has been moved upward into invisibility, but there ought to be a way around the trouble. It will be necessary, I think, to commandeer the aid of the public—or at least the army, to assist us."

Max's eyes were doubtful. "Do you think they'll do it? You know what they think of us—that our machine is the cause of the trouble."

Walford nodded. "I know, but don't forget the Light Brain has unwittingly helped us to get the aid of the public. He radiated his warning for everybody to hear; hence everybody will know what we're up against. This isn't the time for petty vindictiveness, but for wholehearted coöperation."

IN THE DAYS that followed it became obvious, from radio and the restored newspapers, that the Earth had suffered during the sixty-hour absence of light. Thousands of people had been killed as a direct

result of the sudden stoppage of vision; ships had run aground; trains had been wrecked—everywhere there was a tale of woe. In many places terrific cloud-bursts had swept away entire towns, in others blizzards of unprecedented fury had buried cities under eight feet of frozen snow. Even so, the damage was not so terrible as the four in the laboratory had at first expected.

Public opinion, however, was not so much against them now but against the demoniacal Light Brain. Not that anybody knew where the voice had spoken from, or whose voice it was. This being so, Walford made his plans clear at a public broadcast meeting. Max was the first to take his stand before the microphone.

"My friends, while admitting an experiment with a new radio-televisor was the start of these tragic happenings, my friend and I deny all responsibility for the recent sixty-hour light stoppage!" he declared, both to the microphone and the vast audience congregated in the hall before him. "All this trouble has been caused by a brain of light." He explained in detail to the slightly incredulous gathering. "But, thanks to the intellect of my friend Mr. Robert Walford, and the generator of our radio-televisor itself, the trouble of light blockage has been stopped. We cannot, however, go on forever existing in this state; we must uproot the cause. The Light Brain is thoroughly determined to have his own way—but so are we! Mr. Walford has worked out a scheme, and to put it into operation must have the cooperation of the American Flying Corps."

"We are prepared to listen to any reasonable suggestion," said the chairman, obviously convinced by Max's earnestness—at which Max

motioned his friend to the microphone.

The analyst calmly surveyed his notes for a moment, then began: "These light-beings, which Mr. Forsythe has detailed to you, exist some one hundred and forty thousand miles away from Earth. They have, as you've been told, now moved themselves back up the spectrum scale so as to be invisible to us when we attempt to attack them. Manifestly, then, the Light Brain expects retaliation for his vindictiveness. He imagines by this method that he has beaten us to it, so to speak. But, however, we know that the most destructive radiation to them is an ultra-short radio-carrier wave, such as it embodied in our new radio-televisor. The one advantage about this ultra-short carrier wave is that, I find, it is potent not only in the invisible spectrum region below infra-red, but also in the invisible spectrum above ultra-violet. Therefore, since our enemies have chosen to move themselves to a point where we can't see them, we must send forth short-wave carriers from generators similar to those on our radio-televisor."

"May I ask how you know their precise point in the invisible spectrum?" inquired the chairman.

"Certainly! The waves above ultra-violet are too small to affect our vision, but it is possible that some of them can, and do, produce chemical effects—notably photochemical and photographic. I do not think these beings will exist so far up the scale as not even to effect specially prepared photographic plates—or rather films. This, therefore, is my idea. We must have a fleet of space ships—which I'll deal with later—equipped with specially prepared cine-cameras, cameras capable of taking photographs of the

invisible spectrum at one end, and then performing an almost instantaneous developing process, so that the finished film spins out at the other end of the camera and is projected onto a screen. You understand? A combined camera, developing tank, and projector all in one. There is possibly an expert on such subjects somewhere in this audience who can say if it can be done?"

"It can be done, but it will be extremely costly," remarked a man at the front of the audience. "I represent Universal Talkies. It'll need special work to make cameras and developers capable of taking ultra-violet impressions."

"I am quite aware of that," Walford nodded calmly. "Thanks for your assistance; I will see you after the meeting. To resume: Our space ships will also carry ultra-short wave-carrier generators. Then, if we can see these creatures by projecting the camera images onto our screens—our spectrum screens as we'll call them—it will be fairly easy to do the rest. My scheme is to fire over our enemies' heads, so to speak—namely, to project several carrier waves into their world so that they'll be forced to climb down the spectrum scale in order to preserve their safety, as we gradually lengthen the wave length of our carrier wave. So at last they'll come down into visibility. Then, once we've got them down on a solid plane again, we can attack. It will be our task to give them the alternative of either moving themselves away from Earth so as to be quite harmless, or else being destroyed. Now you see why I must have the flying force to assist me. I want trained men to control a fleet of space ships."

"You talk of space ships as though

they're rowing boats," commented the chairman. "I thought space travel had been proved impossible."

"No—improbable," Walford corrected coolly. "The space-ship idea is based upon an accidental discovery I made concerning infra-red recoil. Space ships will be made in the same manner, employing instead electric recoil upon ether itself. So, if I can be assured of public backing, and of the assistance of the treasury, there is no reason why this cosmic blot cannot be wiped out."

"The matter can only be put to the public vote," the chairman answered. "If they accede you will have *carte-blanc* facilities."

THE PUBLIC, it proved, was genuinely swayed by Walford's speech, and the usual regulations and restrictions were swept aside to permit of his having full authority to do as he desired. Certainly such willingness would probably never have occurred but for the remembrance of that voice that had spoken in color. The world realized it was up against an ex-terrestrial menace of considerable proportions, and with brother instinct combined against the aggressor. It was distinctly recognized that Robert Walford was the presiding genius, a man whose brilliant knowledge had so far saved civilization itself from wholesale destruction.

So it was that in various engineer works labor began upon tapering, cylindrical machines—space ships—while in other factories the repulsive machinery was slowly molded and wired, exactly to Walford's formula. In photographic laboratories countless miles of film for photographing the invisible spectrum were emulsionized, and in camera workshops were fashioned the remarkable machines for simul-

taneous photographing, developing and projecting, together with special condenser lights and lenses capable of giving high-powered illumination.

Only once in this march of progress to a resolute end did Walford stop to wonder if the Light Brain knew all his plans. He knew of the creature's power to hear his words. Perhaps, though, having gone up the scale into invisibility, Earthly communications and voices had also ceased. He decided it was hardly probable for communication to exist in two different planes of vibration. In any case he would have to take the risk.

While external work was proceeding under Walford's personal direction, Max, Ada, and Lawson pushed on with the task of making delicate color compasses which Walford had insisted he needed. Undoubtedly his color compass was the crowning achievement of his amazing genius. Within a completely air-exhausted case, the nearest possible to an absolute vacuum, reposed a delicately pivoted needle, constructed on the principle of a radiometer*. The needle, however, was magnetized to be rendered sensitive to the most delicate degrees of color, from a wave length of eighty-one millionths of a centimeter, extremest red, to thirty-six millionths of a centimeter, extremest violet. Upon his graded scale reposed the intermediate colors and their wave lengths, so with the aid of the instrument he was practically certain of detecting anything of a color frequency in the strange world of the light-beings.

At length the day came for the departure from Earth—a departure

that was taken after a considerable amount of ceremony, in which Walford and Max were hailed as the saviors of the age, and their heritage traced back, by some miracle or other, to forefathers who had lived to conquer—and so on. Radio, press, and word of mouth wished them "God speed!" a cry which followed the fleet of forty ships as, under radio control by Max and Walford's own special system, it swept unerringly into the upper air, rose higher and higher, and at last vanished in the morning sunlight.

Back in the laboratory, closely guarded by soldiers, was the still throbbing generator upon the perfect functioning of which reposed, for the time being, Earth's one slender hope of continuing light. Electricians were also present, ready to repair the vaguest hint of a defect.

"These repulsive radiations of yours seem to work all right," Max commented, standing by the control board with Ada. "So does your artificial gravity screen. Guess it's as good as solid earth. H'm, at this rate, we'll soon reach our goal."

Walford nodded. "True enough. We've left Earth's atmosphere already. See—space itself!"

The three looked out upon infinite immensity. The imperfect envelope of atmosphere now removed, they beheld the stars and planets in all their natural glory—seemingly rounded bodies of blinding flame, incredibly bright little spots poised immovable, as it appeared, against an unending curtain of blackest black. The three involuntarily drew in their breaths sharply; there was something unforgettably magnificent about the sight.

Walford turned back to the dis-

* NOTE: An instrument in which vanes move around by light vibration, within a vacuum tube.

tance gauge, another of his own remarkable inventions. By calculating the rapidity of the retarding force to the forward movement of the vessel per second, it had been easy to make an alignment between the two and have the distance indicator automatically register the number of miles covered. The figure now stood at thirty thousand miles, and was rapidly mounting. Outside, in perfect order, were the remaining thirty-nine space ships, all obeying his orders through the Walford-Forsythe radio-communicator. Walford silently thanked the gods for their special radio invention, for no other method would have made void communication possible.

So the journey continued, until at last the one hundred and forty thousand miles' journey was complete. Far away in the void, a monstrous globe of green, hung Earth, the attendant Moon shining silver away to the right.

Then came the stopping order, and the space ships came to a comparative standstill by a powerful burst of recoiling pressure in their forward path, which effectually braked them.

"Man photographic machines," Walford ordered. "Form into a circle and take films from every angle. Report as quickly as possible."

Immediately the order was put into execution, and for an hour nothing was apparent in the control room. The screen at the far end of the chamber was snow-white, with only a tracery of odd black bars. Then suddenly the three strained forward tensely; the camera projector whirled on persistently.

A hazy picture of the horizonless land of the light-beings was coming into view upon the screen. Nothing more than a gray smudge upon a

white background, but it was quite sufficient. At the same moment reports came through from the other ships of similar findings.

"Great, they're just above ultraviolet!" Walford breathed, then turned swiftly to the microphone. "O. K., boys, let loose the carrier waves—point nought four. No lower as yet or you'll blow them to hades, and we don't want that. Guess we'll give 'em a chance—it's the Light Brain we want. Go to it!"

He released his own carrier-wave generator after adjustment, and the invisible power surged through the walls of the space ship and into the void outside. At the same time thirty-nine other destructive radiations shot forth and continued without pause.

As nothing apparently happened, Walford's keen eyes glittered more brightly, and he tightened his lips. "Increase wave length!" he snapped out to the microphone. "Lower down to point nought three, then nought two, until we drive the devils into visibility. Get busy!"

Again the order was obeyed, then as the force crept slowly down the scale of the spectrum until it had reached the place where it must become almost visible itself, there merged slowly into view a grayness upon the blackness of space—gradually it took form.

"We're doing it!" Max yelled. "They're becoming visible!"

"I know—I know," Walford assented curtly. "O. K., boys, slacken up. Stop!"

He cut off the power, and at the same time the land of the light-beings became tangibly solid, a familiar sight to the three in the commanding ship—a world of incredible wonder to the remaining thirty-nine crews. At the order the

ships came gently to rest on the hazy floor.

"Keep four carrier waves going," Walford instructed. "At point nought two. That'll keep these creatures from going up again and dropping us into space. Now let's get going."

V.

LED by Walford, Max, and Ada, a small army of fifty Earthlings left their respective space ships, leaving the others behind on guard, and advanced along the strange floor of the light-land. Presently, as on former occasions, a control room began to merge about them, coming at length into fairly clear relief. The figure of the lofty Ramifod turned from his switches.

"You've come back!" radiated the color bands, agitated this time, revealing, it appeared, a worried state of mind. "Do you realize that you have incurred the undying wrath of the master? You have forced us down to this position."

"And that's not all we're going to do," Walford returned curtly. "We bear you no ill, Ramifod, as you know, but we're determined to wipe out this devil who blocked all light on Earth. He's a fiend—"

"While you've been away, I have discovered something," Ramifod interrupted. "This master, as I told you before, is something different from us—different formation and different mind. He can move in air instead of along the ground, as we do. That falls into no category we can understand. Now I think back, I realize he came from apparently nowhere. And I have discovered that—"

Ramifod ceased suddenly to radiate his colors, and the large purple eyes were looking stonily ahead. Walford, with the others, turned

sharply, then started. Not ten yards away, suspended in the air, was the glowing mass of the Light Brain itself.

A dead silence for a space—then the colors.

"So, Ramifod, you dare turn traitor? You dare to try and inform these interfering and dangerous Earth-creatures of my origin and purposes?"

The colors ceased to radiate, then from the master there suddenly darted a deep-red radiation, hurtled directly at the staring Ramifod. The unfortunate creature seemed to melt into a mist and vanished into a faint pulsating of color, tantamount to an Earthling's death scream.

Walford compressed his lips. In his hand was a small edition of his color compass. In the red beam it had pointed directly to 92.0—a vibration considerably longer in wave length than even extreme red. Heat! His mind revolved around the idea silently, then he looked up sharply as the Brain began to advance through the air.

"As for you creatures," the peculiar apparition radiated, "you have dared to trespass again on forbidden ground. You, with your infernal machines, have forced us down into the range of the visible, have forced us below our normal position, which is just above ultra-violet."

"Yes, just that!" Walford retorted grimly. "We're out to obliterate you, so you may as well realize it. You tried to block light on Earth—and failed! We beat you to it! We know now, too, that you are not of the same species as the unhappy Ramifod; you belong to somewhere else."

"Truly," the colors conceded. "Since you know that much, you may as well know the remainder. I am the ambassador of the Fifth

Light people—a race existing far above even the light radiations of these—er—Heaviside Layer people, as you call them. These creatures are very clever, but unusually passive. They possess inventions of great value relating to light control which we of the Fifth Light do not; what simpler, then, that I come into their world and subject them with my superior mentality? I have done so—I am the undisputed master. All the time I am studying these machines, discovering what to do with them. These creatures dare not defy me.

"In this world of theirs, however, being so near Earth, radio waves are irksome—in our world they do not reach, for it is situated millions of miles from here. While I've been here I have vowed vengeance on all Earthlings for their radio interferences; your short-wave system was the limit. I resolved to have no more of it. You know the rest. I am determined to obliterate Earthlings because of their useless, worrying ways. Is it not the law of the cosmos that the lesser should always give way to the greater?"

"Yes; but it depends who's the greater!" Max retorted. "You're so damnably self-assured, you can't think of anybody but you and your putrid race existing at all! That scheme of yours for blocking light was a filthy, contemptible idea."

"Remarks which are of no consequence!" the Light Brain returned. "If you do not wish to unleash upon yourselves all the powers of which a light-race is capable, get back to your ships, return to Earth, and attempt no interference."

"That's likely!" Max snorted.

"We absolutely refuse!" Walford retorted. "And leave you to carry on your devilry here? What sort

of creatures do you think we are?" He strode forward menacingly.

"Very well, I shall bring the resources of my race to assist me in the difficulty," the master returned. "Though millions of Earthly miles distant, my plane of existence can be communicated with without difficulty, when one understands light as I do. A light year? But a second! A light century? But a minute. Since you are determined to declare war, I declare it also upon the entire human race, and we creatures will win!" And with that the Brain abruptly vanished, leaving the uncertain party gazing into space.

"Say, what's he driving at?" Max asked dubiously. "He looked——"

"No time for conjecture!" Walford snapped. "Here, keep close to me. I'm going to see if I can do anything with that lever Ramifod used to love so much."

He turned aside to the controls and felt at the lever. To his surprise, it was quite solid to his touch, whereas everything else was no stronger than mist. Obviously this one controlling instrument was available for creatures of any vibration.

"Stand by!" he shouted. "Goodness knows what will happen, but we'll risk it!"

He moved the lever a notch, and in response the power room began to vanish—the image of the power room at least—and in its place came another one, fairly similar, save that the engines were different in construction, and obviously more solid. A further pull on the control lever brought the place into quite distinct, three-dimensional relief.

"Good work—good work!" Walford breathed. "We've got the spectrum scale down to a place where we can actually get at stuff without

going through it. What's all this stuff?" He looked keenly at the nearest machine, with its maze of lenses and wires—then after a long study of its intricacies he looked up with a bright face.

"We're fools for luck!" he ejaculated. "This machine is the one which stopped color on Earth—plain as can be. Among these other machines will undoubtedly be the one that's supposed to be making Earth lightless, only we've hetrodyned it. See here!" He pointed to the lensed machine. "So darned intricate I hardly realized it at first. I don't need to tell you that every color has a wave length, just the same as light itself. This machine is on the same system as the one which stopped light—namely, it shortens, by the use of a retarding force, the wave lengths of any color, making them too slow to be visible. Result—monochrome. Look around—we might find the one that's stopping light. If we can, we'll ruin it—"

Walford stopped, his jaw sagging in sudden amazement; then he shouted hoarsely and pointed.

"Look! The control lever!"

The astonished party beheld now, for the first time, a color of pale blue caressing the control lever for altering vibration and spectrum position. It was actually being moved by some nameless force.

Instantly Walford flung himself at it, but the instant his hand touched the color beam he recoiled with a cry of pain. It stung like a million nettles; manifestly electricity in some form or other.

Gradually, irresistibly, the engine room began to melt from view.

"Bob, can't you do something?" Ada demanded hoarsely.

"Quick! The whole place is fading away!" Max bawled.

"The master—he's raising us up the scale so that we'll drop through finally into the void, when the floor vibration is too slight to support us!" Walford panted. "The infernal devil—"

"But surely our radio-carrier waves from the ships ought to stop that!" Max protested.

"They should do, but something must have happened—"

The place became vaguer and vaguer; through the practically transparent walls the space ships themselves outside became vaguely visible. The floor had actually reached a tenuous, hardly supportable state, when the condition suddenly ceased. The pale-blue force beam extinguished itself. The Light Brain became slowly visible in the air.

"This is but one example of what I can do if necessary," he radiated ruthlessly. "In another moment I will continue my activities, until all of you, ships included, drop through into space to complete destruction. My only reason for stopping was to ascertain at what periodicity the floor of this world becomes transparent to you. And, while I am about it, I had better remark that I am quite aware from my machines, that you have succeeded in stopping my light-destroying machine being effective on Earth. Let me tell you that when I am rid of you I shall not only resume light destruction, but also will block sound as well. A race blind and deaf, freezing in ice-bound air. An amusing reflection indeed!"

Whilst the master had been radiating, Ada had edged her way behind the others, and, taking her courage in both hands, seized the controlling lever. She gave it a vicious downward pull, throwing all her weight into the task. It shot

down to its limit. Incontinently astounding things happened.

The vagueness changed to solidity, and even more than that, having the frowning, heavy darkness of an overdeveloped photographic print. Harsh shadows leaped into being. The machines became more-than-solid engines of destruction. But most surprising of all was that the machinery, after a moment, glowed deep red, and issued forth a terrific barrier of surging heat.

"Holy mackerel!" Walford shouted hoarsely, perspiration suddenly rolling down his face in the scorching air. "Don't you get it? Speeding of the electrons! Radiant energy! These machines aren't built for low spectrum values, they emit heat when brought down so far. And heat is mustard to these light-beings; my color compass proved that——"

He broke off, open-mouthed, as suddenly the master, who had been silent, dropped to the floor and rolled about in a startling fashion, issuing forth tumbling bands of incoherent color.

"The heat!" yelled Max, mopping his brow. "It's killing it—and no wonder. I can hardly stick it myself. Great work, Ada!" He clutched the panting girl to him, and the party watched with bated breath.

The red-hot machines soon imprisoned the hapless Light Brain in the midst of those death-dealing radiations and calorific beams—obviously fatal to a creature of light. There came a few more color bands, then the haze of light from the creature slowly died down and at last expired into emptiness.

"Gone!" Walford breathed thankfully, and seizing the control lever he pushed it up again until the room

became normal and the engines cooled again.

Even so they were irreparably ruined. The color machine was a mass of twisted ruined metal work—and so also, wherever in the place it was situated, must be the light-stopping engines.

"Exit the menace to Earth," Max commented. "We've done all we came for."

"No, not yet," the analyst answered grimly. "Don't forget the other members of the Light Brain's race. Beyond doubt he'll have communicated with them, and they'll be coming along as large as life ere long. For the time being we'd better stand by, and watch what happens."

Again the control lever was moved until the engine-room walls were sufficiently tenuous to permit of passing through them, then the party slowly returned to their fleet of ships, pondering over the sudden strange peace and lack of activity since the accidental destruction of the Light Brain and his machines.

AT THE ENTRANCE of one of four space ships issuing forth carrier waves, the party was stopped by a grim-eyed officer.

"Something queer has happened, sir," he announced. "We left our radio beams on, just as you ordered, but something stopped them working."

"Stopped them? Why? How?" Walford knitted his brows.

"I don't know the cause, sir. And—they're hot! Mechanics can't touch them, they're that hot."

"H'm—most interesting."

Walford entered the space ship, accompanied by Max and Ada. Quietly he looked over the radio generator, and upon touching it was rewarded with singed fingers.

Calmly he withdrew from his pocket his color compass, and with a pair of long pliers laid it on the hot metal. Instantly the magnetized needle swung round until it stopped directly opposite thirty-six millionths of a centimeter.

"Ultra-violet!" Max whistled. "What does that prove, Bob?"

"Simply this." The analyst laid the compass aside to cool. "Ultra-violet has been known at times to stop mechanism running, by expanding the metal and causing seizing. I can recall a case where a generator in a Michigan power house was once stopped by accidental radiations of ultra-violet from a contiguous machine. You can take it for granted that the light-beings are responsible for this—whether the Heavyside Layer people, or the Light Brain's race, I don't know yet. It's obvious now how he pushed up the scale. He stopped our machines first, then got busy again in safety." He turned to the officer. "That accounts for the burning you felt," he remarked. "Pure ultra-violet radiations are fatal to human skin and eyesight. Keep clear of those machines until you get further orders."

"Yes, sir. And may I ask what you're going to do now? It's all so—queer!"

"Queer is a very inappropriate word, officer. I think——"

Walford paused and looked out of the ship's doorway. Approaching, he noticed now for the first time, was a veritable army of towering light-beings, their queer, lidless purple eyes apparently gazing straight before them. At last they came quite close, surrounding the space-ship fleet. Color began to radiate from the foremost one.

"We seek your aid," it said. "The people of the Fifth Light are preparing for war upon us—and you.

You killed the Light Brain, and we rebelled against the Light Brain just before you killed it. This being so, the furies of the cosmos will descend upon us. We are comparatively helpless, having no knowledge of warfare, and turn to you for assistance."

"You shall have it," Walford returned promptly. "Your late colleague Ramifod helped us. In return we'll help you. How long will it be before those Fifth Light beings get here?"

"Maybe twelve of your Earthly hours—they have that much journey to make."

"Well, they've already fixed our machines so we can't use them!" Max snapped, and briefly explained. His surprise was evinced by all at the light-being's response.

"That was done by the Light Brain himself. Ultra-violet machines, you call them. We can soon stop them working, and that will mean your machines will be in order again. The master did it so that he could rise upward into invisibility without encountering your dangerous carrier waves. When the Fifth Light warriors come, they will rain death and destruction down upon us."

"What will happen?" Walford demanded keenly. "Detail it. We must know everything so that we can prepare our defensive."

"Their two principal weapons are rays of color, which have behind them all the force of color and can disintegrate us to atoms, and also beams of pure heat—deep-red color, such as the master himself used to use. We have nothing with which to protect ourselves against them."

"What do they come in? Space ships?" Walford inquired.

"Yes; made of a material peculiar to their own world. Transparent

and misty to your eyes, solid to them and to us."

Walford's eyes were gleaming. "O. K., that makes it easier. By the way, how many are there of you altogether?"

"Some twenty thousand creatures."

"You have homes—or something like buildings?"

"Yes, but they're invisible to your eyes."

"That doesn't matter," the analyst replied. "If you want to be saved follow out my orders implicitly. Go to your homes, and stop in them until I tell you to come out. Not one of you must emerge—if he does, it is at his own peril. Don't be surprised at anything that may happen. I take it you can go upward in the spectrum scale almost without limit?"

"Yes," the being acceded. "At least, far far above this state. This is nearly our lowest ultimate. Our highest is far from this."

"Right!" Walford nodded. "Leave everything to me. Now, switch off those ultra-violet radiations that are hampering our machines, then go to your homes and stop in them until you hear from me. What'll I do when I want you? Call you?"

"Shout my name—Hanilof. It will be enough," the being answered. "Now we will go, and trust in your powers to save us."

The army turned and moved slowly away, until at last it vanished in the uncertain haze.

Ada took hold of her brother's arm. "Can you save them?" she asked anxiously.

"Yes, and without much difficulty, too. I've got what I think is a concrete plan, at last. We're going to leave this plane, but before we go we are going to put it into a scale in the invisible spectrum at the far-

thest, most remote violet. That is, about ten degrees above ultra-violet. That will be so far above these Fifth Light creatures that they'll never see, feel, or hear these passive Heaviside Layer creatures. You see, since the Fifth Light beings have weapons that include colors and heat, they can't be very high in the scale themselves in order to use such weapons.

"So, my idea is to bring a space ship—our space ship—very close to the control lever in the power house, and I'll hop out and pull it over. Then, before the scale has time to get to the highest point, I'll be back in the ship with the door shut. This world will apparently melt from under us into invisibility—but the race will be safe because they can stand any height of spectrum range. Manifestly they're not versed in warfare or they'd have thought of the same thing themselves."

"But what's the good of it all?" Max demanded. "You're making these Heaviside Layer people safe, but what about us? It means we fail!"

"On the contrary, it means the strangest and yet the most successful battle ever waged," the analyst returned with unshakable calmness. "These creatures, when they arrive, and find that both light-beings and we have disappeared, will assume that we have become afraid and have, to be vulgar, run for it. They're sure to search around for a while, and in that time our camera projectors will show where they are. Then, it is a point of training our radio-carrier waves upon them—destroying them. It will mean either the end of the human race or them, and I prefer it to be them. They'll have no mercy after the death of the Light Brain. You see, we'll be invisible to them, and they to us,

yet the invisible war will go on between us until either we blow them clean to Pluto, or their inefficient heat-and-color beams somehow upset us—and that isn't likely. You get it?"

"Masterly!" Max breathed. "But, say, how will these creatures know the Light Brain *has* been destroyed, when they can't see the Light Brain?"

Walford sighed. "There being no communication from him will be quite enough to convince them, believe me. Now, I'll arrange things right away, otherwise, if they should come now, we'll be out of luck."

VI.

WITHIN half an hour plans had been duly made, and, finding the ultra-violet effects had duly ceased, thanks to the efforts of Hanilof, the party prepared for departure, the pilot of each vessel understanding exactly what it was his duty to do.

This done, the entire fleet, save Walford's ship, took off into the void, and there waited for their commander to arrive. Walford, in the meantime, brought his ship down within a few feet of the hazily visible control room and within a moment was through the transparent wall.

Seizing the lever, he flung it over to the farthest possible radiation above ultra-violet in the invisible spectrum, then turned and sped back toward the ship. Even as he practically gained the vessel, the floor was apparently sagging under his flying feet. A horror seized him that perhaps he had not allowed himself enough time, or had made the distance too long. Beyond doubt, had the space ship been a yard farther away, he would have plunged through the now trans-

parent floor into the black void below.

As it was, he struggled desperately through the manhole doorway, quick hands seized his arms, and at the precise second of that peculiar molecular collapse the space ship floated safely into space.

"Gosh, that was close!" Max whistled. "You all right?"

"Yes," Walford replied, somewhat shaken. "Guess I hardly expected it would be so long a jump. I misjudged the distance a trifle. However, no harm done. O. K., I'll take over."

He moved to the control board and swung the ship round until he occupied a central position in the fleet of forty space ships, glittering in the light of a blazing, prominence-edged Sun.

"Now, boys," he said into the microphone, "set your photographic machines going at fifteen-minute intervals. The moment anything is seen, stand by for orders."

Max turned to their own machine, and set it in true with the black void where, now invisible, lay the world of the Heaviside Layer creatures.

Frequent tests revealed no trace of anything, then upon the fourth effort the screen revealed signs of the invaders—a fleet of perhaps twenty hazy space machines, occupying a position practically in the circle the terrestrial vessels had created.

"Great!" Walford exulted, when he had studied the screen for a space. "Not much calculation needed for this."

He pulled out his color compass and watched it very intently for a space. It began to swing round indecisively, coming to rest alternately upon orange, then on extreme red.

"Their rays are in action—their heat and color," he remarked. "The compass shows it, but we feel nothing and see nothing, so we can take it for granted we're safe. O. K., boys, let them have it!"

He depressed the button upon the radio-carrier wave generator, and the machine hummed into life. Then, in company with Max and Ada, he gazed with flinty eyes into the spectrum screen. The carrier waves from the forty space ships became instantly visible as pulsating red beams—radio waves, so high in the spectrum as to appear solid—and solid also to the space ships of the Fifth Light creatures.

The instant that paralyzing barrage of destruction smote the invaders their ships crumbled up like cardboard beneath a sledge hammer. Seven of the twenty collapsed on the spot, spewing forth strange spots of light that perhaps were the light-beings themselves. For a time the void was a mass of red beams and crumbling whiteness, in the screens, at least. Through the ordinary window not a thing was visible—space was empty! Incredible war! Waged in the void, each party invisible to the other.

"That carrier wave is a scorcher!" Walford breathed. "Those poor devils being of the same vibration just don't stand a chance. Like us having ten tons of gravel dropped on top of us! Funny, that! If gravel fell on these devils it would go through them and they'd be unharmed. I'll never understand the cosmos and what it contains if I live to be three thousand years old. Hello! They're turning tail!"

"I don't blame them!" Max murmured.

"Bob, why not follow them?" Ada asked quickly, her eyes bright. "If we do that you'll be able to find

where they live, and get rid of them for all time. They're always apt to do damage—if not to us, to the inoffensive beings of the Heavside Layer. Go on—follow them up!"

"It's a brain wave, Ada."

Walford turned to the microphone. "Stop radiating!" he ordered. "Follow these devils back home—to Alpha Centauri if need be!"

Immediately the destructive carrier waves were extinguished, and attention given solely to control boards and spectrum screens. Silently the pick-up reels on the projectors took up their record of the amazing battle, for future use. With like silence the feed spool revolved slowly, being replaced by Max's expert hands the moment it came to an end of its thousand-foot length.

AT FIRST SLOWLY, then gathering speed, the amazing chase began—following the invisible—to the eye—through the reaches of empty space, keeping constantly on the track of the sadly depleted Fifth Light fleet—invisible, deadly avengers. Indeed, it was more than vengeance—it was complete destruction, for the color and heat beams of the Fifth Light people were completely useless against the, to them, impregnable solid power of their adversaries. Nor had they spectrum screens to aid them.

The journey through the void went past the Moon's orbit, past Mars', and still went on, finally attaining a terrific velocity as the space ships of the Fifth Light people flew faster and faster, until Walford could only guess at their motive power. Probably something similar to the one he had devised.

The terrible acceleration began to tell upon the Earthlings as time passed, for they were forced to maintain the terrific speed in order

to keep their enemies in sight. In Walford's particular ship, he and Max took turns at the controls, lying down in the intervals. Ada, they had insisted, should lie down all the time while the strain continued.

It was an existence of intense nerve strain and excitement, for the analyst in particular. He had not only had his own ship to control, but also give directions to the rest of the fleet. Food the trio snatched at intervals—not altogether because they wanted it, but because they knew the necessity of keeping their bodies sustained.

Then at last the invading fleet showed signs of slowing down, within a few million miles of the orbit of mighty Jupiter. Indeed, the giant planet hung in the void far away to the right, a vast equatorially bulging spheroid, etched out against the supernal blackness of infinite space, and attended by its retinue of seemingly three-dimensional brightly gleaming nine moons.

Attention again became riveted to the spectrum screens. Walford glued his eyes to his. A vague landscape was forming; the speed of the Fifth Light ships was fast decreasing. More time passed, then they began to descend upon a landscape similar to that of the Heaviside Layer, and also horizonless, apparently. A faintly visible extent of ghostly buildings was in evidence.

"So this is their hide-out!" Walford muttered, his lips tightening. "The murderous, backbiting fiends! All right—there is a certain portion of the spectrum scale that is going to become visible, and then it's going to go down, down, down the scale to destruction!"

"Say, what are you getting at?"

AST—6

Max demanded, as the analyst gave the halt order.

"Just this. Neither Earth nor the Heaviside Layer people will be interfered with by these creatures again. I'm going to obliterate their entire world, and a good thing, too! Transform the lot of them into heat—destroy them."

"Heat? In a void?"

It was clear Max was puzzled. Ada looked on wonderingly.

"The same stunt we tried to force the Light Brain to climb down the scale. We're going to force these creatures down the scale so that they can't go up without meeting our radio-carrier waves, and to go down means the dissolution of their world by going into the destructive infra-red and calorific regions, which to them will mean such an increase in their electronic motions that it will cause death by their own radiant energy. You remember what happened to the master? We'll not be murderous by doing that. They can choose destruction by our beam or destroy themselves by avoiding it."

Walford turned to the microphone and with a set face gave the order. Then, his hand controlling his own carrier-wave generator, he looked grimly into the screen. It was even then a vision of red, pulsating beams.

Then very gradually he increased the wave length of the carrier wave, giving the order into the microphone at the same time.

Point nought four— Nought three— Nought two—"

Abruptly, through the space-ship windows, the world of the Fifth Light beings became visible, but it resulted at the same time in something Walford had not reckoned with.

Finding their enemies floating

above their land the space-ship crews on the hazy ground below suddenly released a terrific battering-ram of surging orange and heliotrope colors. Walford's jaw dropped as he beheld five Earth-ships go suddenly reeling away to destruction, uncontrolled.

"Hell's bells!" he spat out. "I forgot! Now they're the same vibration as we are their colors and stuff are effectual. Of course! But color couldn't do that— Ah, I get it! The *vibration* of color loosens the molecular structure of the brain. Great heavens, then it must have turned the pilots at the windows of those ships raving mad! Say, keep out of sight of those colors!" he bawled into the microphone.

Not only the colors but also the heat beams began to have effect. These terrific beams, deadly accurate now the creatures below could see their foes, smote upward with devastating force, containing within themselves no heat, but transforming into kindling, lurid energy the moment they impinged upon a solid. Four more space ships dripped to destruction, radio-carrier wave beams waving wildly in the void—for at this point in the spectrum scale the radio waves were vaguely visible.

"Go on—lengthen your wave lengths!" Walford shouted desperately. "Let 'em have it!"

And with a vicious twist he went down a point lower, resulting in the world below suddenly becoming blue. Obviously the land was controlled on the same principle as that of the Heaviside Layer people—by a control lever which fixed the spectrum point necessary.

Each time the radio-carrier waves lengthened their wave lengths, the

hapless creatures below also dropped one lower to avoid it. Yet they still fought on mightily, beams and color rays stabbing through emptiness, the remaining twenty space ships from Earth now concentrating all their radio waves with fixed, immovable intensity.

"Lower! Lower!" Walford ground out, face wet with sweat.

Peacock color—green—yellow—orange—

The incredible land below was a haze of colors as it hurtled down the spectrum scale. At least the creatures had courage. Rather than meet instant death before the radio-carrier waves they were choosing the other death, perhaps even more terrible. Radiant-energy destruction—the very disintegration of their queer bodies. For, to them, infra-red in the spectrum was what to an Earthling the void would be— instant death.

"Lower!" Walford thundered mercilessly. "Lower!"

The light-world slowly changed from orange to red. Then down to extreme red. Then—it had gone! Soundlessly, completely. Destroyed!

"Stop!" Walford croaked huskily. "Stop! We've done it! No more will the Fifth Light beings interfere with the ways of men and less hostile races."

IT WAS a depleted fleet that made its way leisurely back through the void to the regions of the Heaviside Layer people. A journey accomplished comfortably, and with attention to the needs of the body, for the entire party on every ship was worn out with the strain and tension of the battle.

To a great extent they had recovered when their spectrum screen showed that they had come within

the region of the Heavyside Layer people. To their great surprise, however, as they came closer, the region became visible through the windows. Below, they could detect an enormous crowd of the light-beings, looking upward with their purple eyes, and radiating colors amid themselves the while.

Immediately Walford gave the stopping order, and the ships descended lightly to the shining ground.

"The Fifth Light beings turned and fled, so we thought it safe to come out," explained Hanihof. "We saw it in our machines. What happened to them? We have been waiting for your return, and when our detectors showed you in close proximity we made ourselves visible to you."

Walford smiled grimly. "You've no need to worry about those creatures any more. They have gone—forever. And also has the menace to Earth. Indeed, only one thing is left to trouble me."

"It is?"

"Our radio-televisor. It cannot be used for fear of the destruction it will bring to you creatures—" The analyst paused as Hanihof interrupted him.

"We have decided among ourselves to repay you for your kindness in aiding us when danger threatened. This being so, we have, of mutual consent, decided to move our plane of existence to another spot in the void. We will girt our world about some other planet, perhaps a young planet where radio will be unknown and we can live in peace. It will mean security for us and happiness for you, for your radio efforts will be so perfect as to be unbelievable with our vibratory screen removed. You can perhaps

attain your long wish to communicate with Mars—though perhaps now you have space ships you will no longer wish to."

"Even the acquisition of space ships doesn't mean regular *radio* communication with the planets," Walford responded. "Again and again my thanks for your decision. You have opened a vast field of progress on Earth."

Once more the color bands radiated.

"Generosity is not entirely the gift of an Earthling—nor is gratitude. You will find the element in the cosmos, too. We have met, you have liberated us, and now we must part—infinities apart in knowledge, yet linked together with a common bond, of—gratitude!"

HANILOF kept his word. Some two weeks after the return to Earth announcements began to filter through of astoundingly improved radio all over the world. Static was entirely missing, except during thunderstorms. Curious it was that the public did not attribute this clarity to the removal of the Heavyside Layer—which few understood—but to the now firmly world-established Walford-Forsythe radio-television transmitters.

"Wonderful what young brains can do to-day!" commented one sagely.

"Yes, even conquered atmospherics and fading!" agreed another with a wise nod.

Indeed, the experts held out strong possibility of final communication with other worlds, even with normal radio, without recourse to the ultra-powerful Walford machine.

"After all, folks," Max Forsythe said, standing in front of a micro-

phone at a local transmitting station, with a televisior before him, "I can't claim all the wonderful improvements in radio transmission and reception are caused by the Walford-Forsythe machines. You have seen the Heaviside Layer and its people on your local cinema screens, from the films we brought back with us. It is removal of those peoples and their land that causes such perfection in present-day radio. I can only hope that the new system of broadcasting will make you all as happy as—er—my wife and I are to be—er—broadcasting to you now. We have done many things to make this invention possible."

He smiled wryly at the words and Ada shot him a significant look.

An announcer of the station hovered in the background.

In an adjoining anteroom, gazing into a screen and smoking leisurely, was Walford himself. He watched the two embrace, then the view faded.

"H'm, most interesting!" he commented. "If the dolts that listened knew what the Heaviside Layer was we might get somewhere. As it is, Max is purely wasting his time. Done a few things to make the invention possible is curiously near the mark. Enemies of light for instance."

And with the calm detachment for which he was remarkable, he watched his cigarette smoke curl upward to the dome of neon light in the ceiling.

STEPPING ALONG!

I feel pretty good this month. Thank you, all of you, for your fine letters. It makes me feel that it pays to burn the midnight oil to build a better magazine!

Of course I know it isn't perfect, but you understand that I have many problems to solve and your understanding helps. It also helps when you tell me that you recognize our unquestioned pre-eminence in the super-science field.

I'm keeping faith with you and I have confidence that you are keeping faith with me, every one to find one new buyer for ASTOUNDING STORIES. I'm counting on it as necessary to our continued progress.

I'm attempting to give you more than value received; driving forward to give you all there is every month.

Don't fear that we can't continue to progress. We can, and will, move forward every issue. I think you will agree that, from October to date, every issue has improved by leaps.

Then let me confide that I expect next month to make the biggest announcement of the year!

We aren't resorting to trickery to gain and hold your loyalty. Rather, we are building what we believe to be the best, most original, most thoroughly intriguing magazine ever offered to science-fiction readers. We're building it in the belief that we can hold to the highest standards of literature and make our magazine worthy of a thinking audience.

Literary standards build interest. They give us hurdles over which each writer must leap to gain access to our pages. And therein lies our surety of continued improvement in quality and interest.

We're bringing you a new conception next month. The sort of story you start to read—and don't put down until you're through! It's Murray Leinster this time, and the title is: "Sidewise in Time." I can assure you it is a real, vital, gripping Thought-variant.

And one other thing. Many of you have asked for "the editor's name." Now it isn't a secret and I'm not hiding—but don't you think that the more important thing is the magazine the editor produces? I do. It's my "front." Shall we let it go at that?

—The Editor.

Illustrated
by C. R.
Thom-
son



*We were
held helpless
—paralyzed!*

The 100th Generation

*Here is a new approach to the idea
broached in "Short Wave Castle"*

by NAT SCHACHNER

I HADN'T seen Bayley Spears since our apprenticeship together at the Woods Hole Laboratories, so that when I received his rather urgent written invitation to spend the week-end with him, I packed my bag, kissed my

wife and infant son good-by, and caught the late Friday afternoon train from the little university town where I taught biology and evolutionary theory to unreceptive freshmen and seniors alike.

The train journey consumed some

three hours, so I had plenty of time for reflection. In a way the invitation puzzled me. We had been friendly enough at Woods Hole, but that was almost ten years before. Since then our paths had diverged. Bayley Spears, sole heir of millions, had established his own Foundation and forged rapidly into the forefront of research in the fields of heredity and eugenics.

These had been my particular absorptions, too; but I had lacked a wealthy father, and the responsibilities of an early marriage—which I have never regretted—compelled me to accept a routine teaching position in an obscure university which gave me neither the leisure nor the equipment for extended biological research.

The Foundation was an imposing building, and the anteroom with its modernistic furnishings and even more modern young woman receptionist smacked more of stocks and bonds than of honest science; but I let it pass. As I have said, Spears had plenty of money.

I gave my name and took a seat.

"Mr. Spears is busy in the laboratory just now," said the blond young woman. "He left word for you to wait."

I am a patient, plodding sort of man, so it didn't matter. And in a few minutes the receptionist said: "Here is Mr. Spears now. He is ready to see you."

"Awfully glad you came, Rad," he said, shaking my hand warmly. "I was afraid you mightn't be able to make it." He stood back a bit and looked me over. "Still the same Radburn Phelps," he remarked affectionately, "a bit stoutish, a bit grayish, and—shall I say—a bit domesticated?"

"And you," I responded wonder-

ingly, "haven't changed a bit in ten years."

In fact, he hadn't. His dark, lean face, his quick, nervous walk and talk, the blaze of his piercing black eyes, were exactly as I had remembered them.

"Let's get down to business," he interrupted brusquely. "I called you here for a purpose. I've started something big, and I can use you. Come into my laboratories."

We went through palatial specimen rooms, through a lounge room, through a gleaming white operating room that would have shamed most hospitals, into a huge laboratory outfitted with every conceivable bit of equipment to make a poverty-stricken biologist's heart nearly burst with envy.

Spears steered me to a long, glass-inclosed incubator, thermostatically controlled for constant blood heat.

"Here," he said, "take a look at that."

I EXAMINED the jars of jelly nutrient inside its transparent walls, neatly arranged in rows, and all bearing printed labels. The contents meant nothing; the jars might have housed an infinite diversity of forms of microscopic life, or nothing at all. But the labels evoked a slight gasp from me.

The front row bore on top in large letters: *Spermatozoa*. Underneath in smaller print were names. I ran over them hastily, then again, more slowly. I recognized those names; so would any man of average acquaintance with the world's affairs. There were ten jars, and the names were the names of ten of the most commanding figures in the world to-day.

One was a statesman of vision and understanding; another a playwright whose acclaim was almost

delirious. There was a Nobel prize winner in physics; a composer who had explored new harmonies; a chemist of international repute; an artist who made Cezanne appear a plodding primitive; and the others were equally famous in their respective fields.

My eye traveled a bit dazedly to the rear now. Here the jars were uniformly labeled: *Ova*. Underneath were also names—names of women. A famous social worker; a writer of penetrating novels; a regnant beauty and top-flight actress; and the name of a famous singer.

"Good heavens, Spears," I gasped, "what does this mean?"

He rubbed his hands with that quick impetuousness of his, eyes glowing fanatically. "Rad," he said, "I am about to begin the most important experiment ever performed in a laboratory. It is nothing more or less than the propagation of a new race of men, under strict laboratory conditions and under my control. The dream of every eugenicist of the past century is about to take shape and form."

I rubbed my eyes and peered again at the labels. There was awe in my voice when I spoke. "You mean to say you were able to obtain—er—specimens from all these people?"

"Yes, I finally managed it. It took a heap of time and patience, of money in some cases, of cajolings and appeals to vanity in others; but there they are—my specimens—complete. The very ones I wanted, Rad."

He leaned over me earnestly. "You and I had discussed eugenics at length at Woods Hole; we pondered the day when large-scale mating for definite inheritable qualities would be possible. I have

gone much further. I approached these ten men and ten women only after the most careful study of their particular talents and forms of genius—more, I traced the genealogy of each back over generations to insure that there were no flaws in their heredities; that the particular qualities I looked for were dominant in their families. I must confess I have been eminently successful."

I stared in fascination at the innocent-looking jars.

"I understand this much," I admitted finally. "You intend mating particular ovum with particular sperm ectogenically—outside the body—and no doubt you've prepared nutrient solutions in which the fertilized ova can grow normally. But in Heaven's name, where will it get you? You will have incubator babies who will grow to manhood and womanhood, and then you must start all over again, convincing *them* and mating particular germ cells once more. I believe we had decided that an experiment in human eugenics required at least twenty to fifty generations to show definitive results, and you and I and all our works will be dead long before that time."

Bayley burned hotly with the flame of his own devising. "That," he cried, "is where you are wrong." He hitched his chair closer to mine. "Let's get down to fundamentals. Inheritance is carried in the germ plasm, or, rather, in the *genes* making up the chromatin in the germ plasm, isn't it?"

"Well?" I said rather impatiently.

"And from Weissman's day on, it is indisputable that this germ plasm, present in original ovum and sperm, is carried on unchanged to the next generation and handed on by it to the next, so that heredity is simply

the continuity of the germ plasm from generation to generation."

I still didn't see the point and said so plainly.

"Sheer blindness!" he almost shouted. "Why must we bother growing each generation to maturity? Can't we achieve exactly the same results by waiting until the mesoderm, which contains the germ plasm, is formed in the fertilized ova, and remating its germinal cells with similar cells from another fertilized egg?"

I stared. "That has never been done before."

"Wrong again," he contradicted.

"I've just established the proper technique. Within the space of one year, by continued fertilizations of mesoderm germ plasm, we shall have telescoped a hundred generations and skipped almost three thousand years of human life."

I was so dazed that all I could do was echo feebly the word: "We?"

Spears rose and placed his hand on my shoulder. "Yes, we. I'm rotten at actual laboratory manual technique, and you, I remember, were rather a wizard at it. The separation of the mesoderm cells is an exceedingly delicate process. I'm offering you a job, living quarters for your family, and—you don't have to worry about the pay."

IT WAS more than a year later, fourteen months to be exact, when we completed our one hundredth generation. We stood watching the rows of bottles filled with nutrient jelly, each housing fertilized, growing ova, pure-bred, containing definite inherited characteristics in accordance with Spears' decisions, and plotted out on an immense chart facing us on the laboratory wall.

"We've reached the goal," I remarked. "I suppose you'll let this

generation grow to normal maturity."

Spears was literally devouring the contents of the incubator with his eyes. "Yes." Then to himself, as if I were not present, he added softly: "Three thousand years ahead into the future! Men and women of the year 4934, I salute you!"

I faced him firmly. "Listen to me, Bayley. I've been wanting to say things to you for months, ever since I saw how you were controlling the inheritance of these—these beings of the laboratory. I'm uneasy—more, I'm scared."

"What do you mean?" he asked sharply.

"Just this: I admit I didn't like the idea from the very beginning. And I'll also admit it was the more than generous pay you offered that tempted me. Now it's at an end and I can talk freely. This experiment of ours may lead to dangerous consequences. In the first place, we know very little about the so-called laws of eugenics—it's been all theory as far as man is concerned.

"In the second place, we haven't worked as nature works, or even as animal breeders do. We permitted no generation to grow to maturity; we worked from germ cell to germ cell. The outside world, environmental influences, the molding and shaping and eradication of false starts, of possible lethal mutations, have all been eliminated. We do not know what other qualities have developed in these hundred generations beside the ones we bred for.

"Furthermore," I continued, warming up to my harangue—it had been in my mind for quite a while—"you've bred fanatically. Musician with musician, physicist with physicist, writer with writer, again and again, exclusively. Inbreeding of the worst type; never a chance for

new blood, new vigor from outside strains with more ordinary qualities. Heaven only knows what the result may be when they all grow up into men and women."

Spears stared at me. "You're crazy, man. This is the greatest experiment of all time."

"And the most dangerous. Listen, Bayley," I said earnestly. "Take my advice and destroy these—er—specimens before it is too late."

He laughed shortly and turned away from me, to gaze at those confounded jars with the worshipful eyes of a religious fanatic. "Now I *know* you are crazy!"

I shrugged. Of course I hadn't expected anything else.

"What are your plans for rearing these embryos, when they turn into normal human babies?" I asked. I had asked that same question before, during the course of our work, and each time Spears had evaded me. Now, however, he told me.

"I've everything arranged. I'm not taking any chances on contamination from that outside world you spoke of so reverently, and I want no legal complications as to control. I'm sailing with my embryos within a week to a certain obscure island in the South Pacific, now uninhabited. I'm taking along full equipment, a nurse, a doctor, and a child psychologist. No one shall know of my destination, of my plans, until I return with my new race, some twenty years hence."

"But food, clothing, necessary supplies!" I said, overwhelmed.

"I have left instructions. A ship, with a trustworthy captain I know, will call once a year. Even *he* won't see my charges. He will pick up a bottle on an outside reef in which my requirements for the next cargo will be listed."

"Twenty years!" I said slowly,

then shook his hand. "You are a true scientist, Spears."

"I want you along," he remarked.

"Me?" I echoed startled, and shook my head. "Sorry; it's impossible. Aside from my doubts, I have a wife and a child." I smiled quizzically. "A normal youngster, growing in quite ordinary fashion."

He appeared disappointed. "I'm sorry, too. In that event, Rad, you are welcome to my Foundation and certain funds I'll leave in trust. No sense in your going back to that stifling little university."

I could only answer inanely to this most generous deed of gift. "But you—where is this island? Where can I——"

He shook his head. "I'm not telling—not even you. I intend dropping out of sight completely. I want no interference with my plans."

I PROSPERED rather well; not because of any particular talent of my own, but because of the splendid equipment of Spears' Foundation—I kept the name—and the very generous funds left at my disposal. My name became rather well known in biological circles, and I flatter myself that some of the work I did attracted attention.

The years passed, and inevitably I grew older. My paunch grew with the years, my hair thinned to semi-baldness, what little was left of it was quite gray—in short, I was in my fifties. The one great sorrow of my life was the death, some five years before, of my wife. She had been loyal and devoted in adversity, and it was a pity she had not tasted sufficiently of the fruits of my prosperity.

My only son—officially William Phelps, but Bill to me and all his comrades—was being graduated from college within a month, and

he was at once my pride and—I must confess, a bit of a disappointment. Not that he wasn't a good lad; far from it. He was twenty-one now, athletic, a football star to be exact, kindly, merry, splendidly straight. But he was not a scholar, and he certainly was not a scientist.

He was in my laboratory now, watching with amused affection what it pleased him to call my potterings around, while for the thousandth time I thought of the vagaries of heredity, and for the thousandth time of Bayley Spears and his young men and women with their one hundred generations of pure-bred, controlled heritage ahead of the present human race.

True to his word, he had vanished completely from sight, together with his jars of embryos, and, true to my own promise, I had made no attempt to find him. The twenty-year period was nearly up, and I must confess I was waiting anxiously for his return. The results, one way or another, would prove of incalculable importance.

"Hurry up, dad!" said my son and heir a bit impatiently, looking at his wrist watch. "We're late for the game now."

"I've got to finish this. It'll take only another five minutes." And because I was rushed, I pottered only the more, as was my wont. At last I was through, washed up, and ready to go.

My secretary came in. "A gentleman to see you, sir."

Bill intervened: "Tell him to come to-morrow. We're leaving."

"His name is Captain John Lawrence," she went on coolly, as though he had not spoken, "and he is a sailor. Said it was most important—urgent was the word he used."

I felt a bit uneasy. "Show him in," I said.

He was the typical grizzled, weather-beaten sea captain—of similarly weather-beaten old freighters, that is, not of your fancy liners. He plunged into his story at once.

"It's about Mr. Spears, sir. There's trouble, though for the life of me I don't know what. Y'see, he hired me under strict secrecy these twenty years back, t'make annual stops at a certain little island in the South Seas. It ain't even on the maps, it's so small an' out of the way.

"Well, according to contract—and, mind you, I was paid well for my trouble—I put in around March 1st, regular. My instructions was to anchor off the reef that went all around the island and pick up a bottle moored to a buoy. In it I found lists of things to bring on my next voyage, and on the reef was a huge steel case to hold the stuff I brought along."

"But Spears, man!" I interrupted excitedly. "How was he all these years, what did he say?"

He looked at me blankly, shifting his seaman's cap from hand to hand. "I don't rightly know, sir. Y'see, I never saw him, nor hide nor hair of anything on the island. It's deeply wooded, and the shore is all cliff. Only one place I could see blue water, a sort of inlet leading into the interior. Well, this March 1st, as per usual, I put in and found my bottle. Everything was as normal, but the note in the bottle—well, here, read it for yourself."

HE UNBUTTONED his pea-jacket, fumbled in an inside pocket, and brought out a soiled, folded scrap of paper. I literally tore it from his hand in my eagerness and

ripped it open. Bill was leaning over my shoulder. It is a tribute to the captain's story that Bill had forgotten completely about the big baseball game of the year.

"Danger!" It read in a trembling script so unlike Spears' former bold, discursive strokes. "By the time you pick this up, very likely I'll be dead. Better so! I should have heeded Phelps' warning. Too late now! Sheer off at once; don't attempt a landing. Go to nearest naval station of any great power; have warships sent to blow this accursed island out of the water. Above all, no landings!

"The world must be protected from what this blot on nature holds. I knew it years ago, but I was stubborn. I thought to change things. I am paying the penalty. Deliver this to Radburn Phelps, care of Spears' Foundation, Briarcliff, N. Y. He was right, and I was wrong—hellishly wrong. I leave you everything, Rad; all my worldly belongings. Good-by. I must sneak this off; it's my last chance."

It was signed: Baley Spears.

My hand shook as I read it. I looked up at the grizzled sea captain helplessly. Bill gave a sort of whoop. He had heard parts of Spears' story from me.

"Did you follow instructions, Captain Lawrence, and raise the navy?" he snapped.

The old salt shook his head. "No, sir. In the first place it would 'a' sounded kind of lunatic, and I got a reputation to uphold. Ain't never even reported a sea serpent in all my seagoing days. And in the second place, I didn't like the idea of blowing the place up. Maybe Mr. Spears was still alive. So I thought I'd come to you first, sir, seeing as I didn't know what it was

all about, and I didn't want t'do anything as might harm 'im."

Bill clapped him heartily on the back. "And you did absolutely right. A man of discretion and parts, I see. Where is this island?"

He told us its bearings; it didn't have a name.

"And you came straight for New York?"

"Took me nigh six weeks."

"How's your crew?"

"Good lads, all." The captain grinned suddenly. "All armed, an' spoiling for trouble."

"Good!" exclaimed my most remarkable offspring. "I see we understand each other."

I was sitting, dazed, overwhelmed. My old friend was dead; his great experiment gone to some frightful smash. I found it hard to grasp the thing entire.

My son had no such difficulties. "We'll have to pack in a hurry," he told me casually. "You'll be ready to sail to-morrow, Captain Lawrence?"

The sailor nodded. "I left word in port to coal and provision her before I came up here." A most amazing old salt!

I came out of my daze. After all, I was no longer young, and rash decisions came hard.

"We'll do nothing of the sort, you young whelp," I sputtered. "We'll let well enough alone. I'm notifying Washington right away, so they may take the proper steps. Those were poor Bayley's last wishes."

Accordingly, at noon sharp of the following day, the *Mary of Scotland* sailed out of a Brooklyn dock, every sail set to catch the whipping breeze, engines pounding under full pressure, bound for an unknown island in a little-known part of the South Seas. On board were Captain Lawrence and a hard-bitten crew of ten,

together with Bill Phelps, self-appointed master of the expedition, and his doddering old father, a most seasick individual, and in every one's way.

WE RAISED the island exactly five weeks later. It loomed on the horizon like a veritable replica of Böcklin's painting, the "Island of the Dead." It was roughly circular in shape, and not over three miles in its greatest diameter. Frowning cliffs climbed perpendicularly out of the blue surge of the Pacific, and a reef, smothered in foam and only occasionally rearing its jagged rocks, seemed to encircle the island completely.

We were all on deck, every man strained and excited. I had even forgotten the continuous nightmare of seasickness that had followed me all the way from New York.

"You see," Captain Lawrence pointed to what seemed a platform of rock in mid-reef, "there's where the buoy is to which the bottle was attached. And if you'll look closely, you'll observe the steel chest in which we put the supplies."

Bill shaded his eyes and looked. "I don't see any opening through the reef."

"There is one, but it's too shallow for our *Mary*. Just enough for a small boat."

We anchored near the reef. The lifeboat was launched and rowed over to the buoy. The mate came back soon and reported that the stores of the previous voyage had not been touched. I stared nervously at the grim, battlemented island. The silence was ominous, the unstimulating character of the wooded cliffs a threat. What mysteries of evolution lay within? Perhaps—and my heart gave a bound—they were all dead. In that case—

"When do we land on the island?" I asked the captain.

"We had intended exploring this afternoon," he replied, with a sly, sidelong glance at my son.

That obstreperous youngster said roughly: "Now look here, dad. There's danger in there. You can't go."

But I am stubborn, too—on occasion—and I wanted to see at least the skeletons of those strange inheritors of the future. I was positive they were all dead and that this talk of danger was ridiculous.

So when the boat sheered off I sat with the rest; the captain, Bill, and four members of the crew. All were armed with rifles and revolvers except myself. I had never used a gun in my life.

We rowed through the gap in the foamy reef and circled the island in the comparatively still inner water. Halfway around was the inlet of which the captain had spoken, and we went in with swinging oars. The stream narrowed sharply between beetling walls until we could almost touch either side. Then it opened suddenly into a hollow, a bowl surrounded by precipices and lush with the vegetation of the South Seas. The stream trickled to an inglorious end not much farther on.

At the farther end, close to the frowning wall of the mountain, nestled a series of well-constructed cabins. In front were what once no doubt, had been clearings, tilled patches of soil, but they were now overgrown with the crawling life of the jungle. Not a sound, not a sign, to show that human life still existed.

"What is that?" Bill demanded sharply.

The boat had grounded on a little sandy beach, and the men were peering fearfully around. At the sound

of his voice, oars dropped and rifles sprang into jittery hands.

A GIRL was coming down the mountainside, or, rather, she was clambering down an impossible wall with the agility and sure-footedness of a goat. Even as we gasped she sprang lightly into the valley and turned her face toward the inlet. Then we gasped some more.

I am already an old man and not given to overexamination of pretty faces, but never in all my years had I ever seen such a glorious creature. She was a study in gold, as she stood, lightly poised, not yet seeing us, her rounded, supple limbs incased in khaki riding breeches and open blouse. The skin of her oval, cameo-cut face was a soft, warm gold, her hair was glittering, fine-spun gold, and later we noticed that her eyes, of sea green, had golden flecks that literally dazzled.

"Damn!" said my son, and the curse had a most prayerful sound. I'm afraid that Bill, a most susceptible youth, succumbed at that first sight. "If that's what old Spears developed, then— Hi, there!" he yelled.

The girl swung around with a single flowing motion, saw us, and vanished in almost the same movement. Or so it seemed to me. For the nearest covert—a clump of palms—was at least fifty feet behind her.

Bill sprang recklessly out of the boat and started running. I shouted after him, but he refused to hear. Then I, too, tumbled out. Captain Lawrence rasped an order, and he and two of the crew were at my side, following. Bill had already disappeared.

I hobbled through the waist-high grass as fast as I could; Lawrence thoughtfully keeping pace with me.

We had reached a point in the middle of the valley when song burst full-throated in the still, warm air. We stopped as though brought up against an invisible wall. At first I thought it was merely the surprise of hearing the singer, but I was soon to realize the horrible truth.

I CALL it song, but in fact it was indescribable. The unseen voice had a vibrant timbre, a range I would have called unbelievable. It darted unhesitatingly over a range of four octaves; the notes were keen, barbed shafts that imbedded themselves under one's skin and stung nerves into protesting life. I felt like a flayed animal under that strange torrent of sound. I quivered and groaned and could not move. Exquisite agonies brought tears to my eyes and beads of perspiration to my body. I saw the others; they, too, were suffering, nor could they move.

It flashed on me then—the hypnotic sway of this ultimate music, the keen, tortuous jangling of these superharmonies. I remembered with blinding clarity the chart in the laboratory; the last mating of a hundred generations of the concentrated offspring of a famous singer and a noted composer. There had been evolved a novel, an unexpected weapon from melody, a binding hypnotism more potent than guns and poison gas.

I struggled to break the influence; the sweat poured from me; but we were all fast bound. There was a rustle of movement from behind what I had thought deserted cabins, and two beings stepped into view. One at least might be termed human, though he was tall and willowy, with elongated head and pale, staring eyes. It was his mouth, though,

which attracted the most attention. It was shaped like an ancient lyre, and across the protruding lips stretched a half dozen gutlike cords, which vibrated as he spoke. He, then, was the singer, the far-product of musical evolution.

He turned his pale cold eyes on us and spoke to his companion. His vibrating voice cut like saw-edged knives: "These creatures resemble the primitive—Spears. They must have come from that outside world he used to talk about so much, eh, Lorn?"

His companion definitely was not human. He was a whole chapter out of a nightmare. Evolution had done its worst as far as he was concerned. Everything about him was unhuman, from the tough warty skin that inclosed him, through the rubbery dangling fingers to the crowning horror of all—a single round, unwinking lidless eye set underneath a broad expanse of greenish forehead.

My voice was also paralyzed so I could not cry out. But my mind was clear. I visualized the chart. What and who could this be? Nothing that the chart could explain. Lorn must have been a mutant, somewhere in the earlier generations, that had bred true and increased its divergence from generation to generation. Afterward, by a series of eliminations, I discovered that he was the statesman run wild.

That terrible eye seemed to bore through our immobile bodies.

"No doubt, Musik," he said finally in harsh, grating tones, "we must get rid of them, unless Bion wishes them for experimentation." He shook his warty head. "Yes, decidedly, that would be wise. From Spears' descriptions we should have no difficulty in gaining control over

the subsavage tribes who inhabit the world, but it is better to be prepared. These living creatures by their reactions to Bion's tests will provide us with valuable information. The primitive, Spears, killed himself before we learned much, and the others, very foolishly, we slew too quickly for dissection purposes. Bring them along."

Musik spread his mouth, the cords tautened, and a peculiar trill issued. Like automatons, stiff, volitionless, we moved jerkily through the lush growth. Horror enveloped me. These end-products of our own laboratory experiment were about to treat us even as we had treated them—curious subjects for experimentation. That reference to Spears—poor Spears, he was dead, then—made me gulp. There was no pity in these supercreatures of a hundred generations hence; nothing but cold scientific curiosity and the lust to conquer a world inhabited by a primitive type of man. I had warned Spears, and I had been right. There were other factors in heredity besides talent and genius—there were the character traits of pity and understanding and justice and humanity, and these by desperate inbreeding had been removed or warped beyond our conceptions. And here was the result.

Then I laughed, soundlessly, bitterly. I had warned Spears; but Spears had also warned me. And I had not heeded. He had known, and I had not. Not only were we to be subjects for some particularly frightful kind of reaction-study, that had made Spears kill himself rather than undergo further, but we would be directly responsible for an unsuspecting world becoming subjected to creatures against whom I already suspected there was no defense.

BY THIS time we had come mechanically to the rear of the cabins—even the two members of the crew we had left in the boat. The whole lower face of the cliff had been hollowed out into a deep-penetrating cavern, whose rounded sides were of polished smoothness. Passageways, glowing with soft light, radiated like the spokes of a wheel farther into the heart of the mountain.

A laboratory occupied the rear, equipped partly with apparatus I recognized as Spears', but mainly with instruments and machines of complicated design whose meanings were utterly unknown to me. In the front, seated in a circle, were the other products of our unfortunate artificial evolution—a strange, diverse, and unhuman group. I could see the wild glare of fear in the eyes of our sailors, and even I shuddered against the hypnotic influence; though, from a knowledge of Spears' matings of inheritable qualities, I could label most of them. There for example must be Bion, the scientist, with enormous bulging head and dwarf, waddling body. There was an affected woman with a dirty-green complexion and protruding lips—was there a courtesan somewhere in her line of heredity? Another was a giantess with massive, rocklike features; a man with eyes that rolled round and round in their sockets and seemed to possess telescopic powers. There were some fifteen all told. Four of the original embryos, I found out afterward, had aborted or died in infancy, and the golden girl was missing.

Musik trilled again, and pain stabbed through every nerve. Then warm life flowed back into my limbs.

Lorn, the spokesman, bent his wary face on me. "Where do you primitives come from?"

I determined to face them boldly, though my knees were shaking. "We come from the great world outside, to which this island is but a tiny pin prick."

Lorn gave vent to a grating, contemptuous laugh. "So Spears had said. It will give us room worthy of our powers."

"There are millions of human beings, and they possess weapons that can overwhelm you."

He was not impressed. "When we were infants Spears taught us of your weapons. Now that we are grown we have discarded such toys. We have invented our own. But why have you come to this island?"

"I was a friend of Spears; in fact, I helped him in the experiment by reason of which you are now alive."

A growl went rumbling around the circle.

Lorn's wartiness sprang into bolder relief. It was the first sign of anger I had seen. "Lies!" he said. "You primitives arrogate too much to yourselves. No feeble mentalities such as you possess could have possibly conceived the idea of us. We are a race apart, superior, on whom Spears stumbled when he landed on this island."

A roar of approval rose from the others. Passionless, coldly indifferent otherwise, this artificial generation had one sore spot—that reiterated insistence by Spears of their planned development. Vanity evidently was one primitive human trait that had not been outbred.

I tried to play on it. "Nevertheless, it is true. I could read each one of you the genes of heredity that went into your make-up."

Lorn, as I have said, was an inbred statesman. He grunted. "Enough of that, primitive. Bion will take charge of you. We require certain information about your tribe; your

physical, biological, and mental characteristics. We are about ready to leave this island and make the world ours. We are the inheritors of this earth, and it is fitting that we enter our heritage."

"What will be the result of Bion's experiments—to us?" I asked with a show of boldness.

"Decomposition, no doubt," he answered indifferently, and became absorbed in thought.

One of the crew, a giant Norwegian, who had been moaning with superstitious terror, went suddenly amuck. He sprang toward Lorn with strangled cry and outstretched hands. The woman with the protruding lips flung a little capsule.

It hit him squarely on the forehead and broke. A dark, sticky fluid oozed out, ran down his face into his nostrils and mouth.

The effect was instantaneous. He staggered in mid-spring and collapsed. Almost at once his body began to swell, his skin turned fevered, and one hideous cry burst from his tortured throat. Then he was still.

THE REST of us remained frozen, in our tracks, horrified at the fate of the poor Norwegian. The circle of the hundredth generation remained unmoved, indifferent. The woman of the capsule even yawned.

"Take him away," said Lorn.

Only Bion, the dwarf with the bulging head, protested. "You have spoilt one of my specimens," he said severely. "I have few enough as it is."

Lorn nodded. "That is true." He turned to the thrower. "Next time, Mantis, do not use the bacterial capsule. Paralysis is sufficient."

She yawned again. "I had never seen its full effects. I was curious."

Musik said suddenly: "Where is Una?"

Lorn frowned. "I am afraid Una has not merely the body of a primitive, but the characteristics and feeble-mindedness of one. She refused to join us when we set upon Spears and his fellow inferiors; she has held herself aloof from all our plans. Now, in the face of express orders, she has disappeared. I am of the opinion that the time has come to treat her definitely as a primitive and eradicate her from our circle."

Approval rolled around the group, the women sounding somehow, the most vehement. Was feminine jealousy another trait that had survived to the hundredth generation?

But the mention of Una—undoubtedly the golden girl—brought other and more pressing anxieties to me. Where was Bill, my impetuous son? I had an awful picture of him lying in hypnotic state in the clump of palms, to be stumbled on eventually by one of these laboratory creatures, or to die of slow rotting paralysis.

Lorn got up. "It is time. Remove your specimens, Bion."

The dwarf scientist came waddling up.

At the sight of him, Captain Lawrence, who had held himself impassive, shouted suddenly: "All right, boys, let's die like men—fighting."

His heavy fist crashed out and caught Lorn on the side of his warty face. That monstrous mutant went down in a heap. The three seamen, yelling like madmen, threw themselves desperately into the fray. The blood lust surged through me, and, as I am rather soft of body and shortwinded, I prudently chose Mantis, the woman of the capsule, for my adversary.

The first surprise carried all before it. I caught her hand as she was reaching in her tunic for something. Four of the men, including Bion, went tumbling at the fierce onslaught.

Then the giantess flashed a weapon. It glinted coldly in the light—a long, polished tube.

Lorn, on the ground, saw it and shouted: "Don't kill them, Juno. Musik!"

Musik side-stepped, and the cords over his mouth vibrated. A piercing, stabbing note issued. At the first sound I felt the deadly paralysis creeping through my limbs. I struggled desperately, but motion had already failed me. We were doomed to horrible vivisection, even such as I in the past had inflicted on rabbits and guinea pigs, and thought nothing of. The woman was jerking me erect.

A shot resounded, making crashing thunder. I saw Musik clamp his queer-shaped mouth together, and fall headlong. At the same time the glow of the walls winked out suddenly, and darkness blanketed everything. Outside it was already night.

Then my pulses bounded, as I squirmed in unaccustomed wrestling with Mantis. I heard my son's voice, and his shouted words were in German:

"Outside, everybody, at once, and run like hell!"

Joy brought new vigor to my aged limbs, the paralysis had departed with Musik's death, and I broke loose with a last violent effort. I dashed out of the artificial cavern, dim figures panting alongside of me. Captain Lawrence had heard and understood, too.

Behind us was noise and confusion, and the great rough voice of Lorn calling for pursuit. We were quite a distance from the beached

boat, and the vegetation was thick and entangling. We could never make it. My lungs were bursting, and I realized that I was holding back the others.

"Go ahead—without me," I panted.

Lawrence seized my arm without a word and propelled me forward.

The next instant the island heaved under our feet, and the sky seemed to collapse in a blinding concussion of sound. I fell into a bottomless pit.

WHEN I managed to struggle out of it, I found myself outstretched on the little sandy beach, and my forehead wet with water.

"What happened?" I asked feebly.

Bill was next me, his forehead gashed. The golden girl, Una, was a warm blur in the starlit night. Others were stirring and moaning in the shadows. There was an acrid, sulphurous odor heavy on the air.

"Look back," said my son, and grunted to hide his pain.

I turned with slow, tortured movements. The cliff that had inclosed the cavern was a crumbling ruin; the artificial cave, the cabins, were buried forever under thousands of tons of rock and débris.

Later, after mutual first-aid administrations had brought all our party around, Bill explained:

"You see, I had found Una almost at the time Musik pulled his paralysis tunes. And she, good egg, did not turn me in."

Even in the darkness I could see that glorious golden tint changing to a warm pink.

"I was not one of them," she said. Her voice was grave and quietly melodious. "They scorned me, and told me I was a primitive. Spears explained to me why. He said that somehow I was an atavism, a throw-back to his own kind. Even as a

little girl he liked me more than he did the others. He soon grew afraid of them, but he refused to leave. Said he was a scientist, and this was his experiment. So when Bill came, I was sorry for him. I felt he was my kind, and not Lorn."

"And she sure is my kind," interposed Bill, a shade too enthusiastically. "She hid me up a certain ravine, and we got to talking. I heard how Lorn had led the uprising, and killed the doctor, the nurse, and the psychologist. Spears they kept for a laboratory specimen." He shuddered. "That poor devil went through the tortures of hell. Yet, somehow, he managed to escape temporarily and left the warning note. Then they caught him again. He killed himself rather than go through more experiments."

"By the age of twelve this super-generation had grown fully adult, and, working on the basis of the elementary science Spears could teach them, they evolved new and strange principles. They hollowed the cavern with a new type of power, burrowed deep into the mountain to extract the ores they needed. Spears was no fool. Though stubborn and unwilling to quit while he still had a chance, he must have seen that some day a crisis might be reached.

So, secretly and unknown to all except Una, whom he trusted, he imported for the past five years, quantities of high-powered explosives——"

Captain Lawrence started. "That is right. Every supply memo called for dynamite and TNT. I used to wonder."

"He stored it in one of the passageways," Bill continued, "against the day. But they caught him flat-footed. Before he killed himself, he managed to whisper the secret to Una. She kept it to herself, knowing that she was a pariah, hugging it as a final measure. She showed me the entrance from the top of the ravine."

"Why," I asked, "did you yell in German for us to run?"

"I was positive Spears hadn't taken the trouble to teach them foreign languages."

Lawrence and his men had already floated the boat.

"We're ready, sir. The men on the *Mary* will be pretty anxious."

I paused at the gunwale to glance back at the mountain of debris. Underneath lay the mortal remains of the hundredth generation, Spears' tremendous experiment in eugenics.

I stepped into the boat. "Shove off, captain," I said.

Next Month's Thought-variant will be:


SIDEWISE IN TIME

by Murray Leinster

It is a startlingly new line of reasoning
on the subject of time.

The *Part Two* Legion of Space

*Illustrated by
Howard V. Brown*



*They lay on top of the ship
for hours, motionless, tor-
tured by the sun.*

by Jack
Williamson

UP TO NOW:

In the thirtieth century, John Star—then John Ulnar—receives his commission in the legion of space, with orders to join the guard of Aladoree Anthar, a lovely, mysterious girl, keeper of AKKA—the secret weapon of humanity, so terrific that its plans are intrusted to only one person in the system.

Under the command of Captain Eric Ulnar, a distant kinsman and hero of an expedition to the weird star Yarkand, he is sent to a strange

old fortress on Mars, where the girl is hidden. For two hundred years, she tells him, AKKA has protected human liberty and peace, under the democratic Green Hall Council, from the plots of the "Purples," who wish to restore the empire, place the despotic family of Ulnar on the throne. Eric Ulnar, she says, is the

heir, scheming to dispose of her and her weapon, to clear his way to power.

But John Star is unable to believe her. When the old captain of the fort is mysteriously murdered, he obeys Eric Ulnar's order to arrest and lock up the three remaining loyal men of the old guard, Jay Kalam, Hal Samdu, and Giles Habi-bula.

A strange, titanic space flier has landed near, and Eric Ulnar slips away to go to it. Following, John Star demands an explanation. Eric Ulnar insolently confesses that he is a traitor, that he is planning to abduct Aladoree to deprive the Green Hall of her weapon. The ship, he says, is from Yarkand; he brought back as allies the monstrous beings he found there to help him seize the throne.

From the ship a strange weapon wounds John Star; and the vessel departs while he is helpless, taking Eric Ulnar with the captured girl and the priceless secret of her weapon. He has betrayed the Green Hall and the legion of space!

John Star is faced with disgrace—and the system with disaster—unless he can recover the kidnapped girl.

VI.

AH, LAD, it's time you thought of us!" wheezed Giles Habi-bula plaintively from the darkness behind the bars of the old prison.

John Star was unlocking the rusty door. Here was one thing, at least, that he could do to repair the traitorous work of his kinsman—though the greater thing, the rescue of Aladoree and her secret, was all but hopeless.

"Can you bring us some broth?" the complaining voice went on.

"And a bottle of the old wine from the cellar? Something to revive us and give us strength for stronger victuals?"

"I'm going to turn you out," said John Starr. Then he added bitterly: "That much I can do to make up for the fool I've been!"

"You must help us creep out and up to the blessed sun. Don't forget we're mortal weak. Ah, me, we're starving! Not a bite to eat since the day you locked us up. Not a blessed morsel for all that mortal time. Though I cut off the uppers of my boots and chewed them for the bit of nourishment in the leather."

"Ate your boots? Why, it was just this morning that I brought you here!"

"Don't jest with old Giles Habi-bula! Don't be so heartless, when he's had nothing but his blessed boots to eat, rotting in a dungeon for mortal weeks."

"Weeks? It wasn't ten hours ago! And I let you eat all that breakfast in your room, just before—enough to provision a fleet!"

"Don't torture me with your jokes, lad! I'm starved to a blessed bag of bones."

The rusty bolt at last shot back, the door creaked open. Giles Habi-bula rushed out, Hal Samdu behind him, and Jay Kalam, walking deliberately.

"We are free?" asked the latter.

"Yes. The least I can do. I've been a fool, an utter idiot! I'll never be able to undo the crime I helped Eric Ulnar carry out, though I'm going to spend the rest of my life trying to!"

"What has happened?" Jay Kalam's low voice was anxious.

"Eric Ulnar was a traitor, as Aladoree thought. After I had locked up you three, he had the way clear.

The ship—the one that landed last night—came from Yarkand. Monstrous creatures aboard, allies of Eric's—it was one of them that murdered Captain Otan. He's giving them a shipload of iron, to pay for their part. It's precious to them. The ship took Eric away and Aladoree. I was—hit. Can just now walk again."

"It's the Purples?"

"Yes; as Aladoree thought. The plot is to restore the empire, with Eric on the throne."

They entered the courtyard, bright with the afternoon sun. Giles Habibula stood with his thick hands stretched out in front of him, staring at them in amazement. He fingered his heavy-jowled face, slapped his bulging paunch.

"For life's sake," he gasped, "tell me, was that no joke? Is this the same mortal day? All that suffering! My boots!"

"Forget your belly, Giles!" shouted Hal Samdu, the giant, and turned to John Star with helpless anger on his broad red face.

"That Eric Ulnar—" he panted, incoherent in his rage. "Aladoree—he has taken her, you say?"

"Yes. I don't know where."

"We'll find out where!" he promised savagely. "And bring her back. And Eric Ulnar—"

"Of course!" It was the low, calm voice of Jay Kalam. "Of course we shall attempt her rescue. At any risk. The safety of the system demands it, if it were not our simple duty to Aladoree. The first thing, I suppose, is to find out where she is. And that may not be easy."

"We must find a means of getting away from here," added John Star. "I suppose there's some way of communication?"

"Yes. A little ultra-wave radio transmitter, installed for emergen-

cies. We must report to legion headquarters, at once."

John Star winced, said bitterly: "Yes, of course. Report what a fool I was! How Eric Ulnar duped me!"

"Don't blame yourself," Jay Kalam urged him. "Others, higher up, were deceived, too, or he wouldn't have been sent here. Don't blame yourself—you could have done nothing alone. Your only guilt was obedience to your officer. Forget your regrets. And let's undo the harm that's been done!"

"Of course that's the thing. But I can't help feeling—"

"Come on! We'll send a message to the base—if they didn't smash the transmitter before they left."

JAY KALAM'S apprehension was realized. The little transmitter, placed in a small tower room, had been systematically and utterly destroyed—tubes smashed, condensers hammered to shapeless metal, coil wires cut to bits, battery jars emptied and broken.

"Ruined!" he said.

"We must repair it!" cried John Star.

But with all his optimistic determination, he soon had to admit the impossibility of the task.

"Can't be done. But there must be something. The supply ship?"

"Won't be back for a year," said Jay Kalam. "They came seldom, to avoid attracting attention."

"But when the station here remains silent, won't they know something is wrong?"

"It was only for emergencies. We had never used it. The signals would have been picked up, the station located. We depended on absolute secrecy."

"Could a man walk out?"

"Impossible! No water in the desert. This is the most isolated spot

on Mars. We wanted no accidental visitors."

"But there must be something we can——"

"We must eat," insisted Giles Habibula. "Even if it is the same mortal day. Nothing like good food to quicken the mind. A good supper with a bottle of the old wine to wash it down, and you'll have us away from here this blessed night."

And, indeed, it was while John Star sipped a glass from the old man's precious cellar that inspiration came.

"We've light tubes!" he cried. "We can step up the output—doesn't matter if they soon burn out. Flash a distress signal. Against the dark background of the desert, somebody would see it from space."

"We'll try that," agreed Jay Kalam. "Might not be a legion cruiser. But it would have a transmitter to call one."

"Ah, what did I tell you? What did mortal old Giles Habibula tell you? Didn't a drop of wine sharpen your brain like anything?"

When the cold, clear darkness of the Martian night crashed down on the red landscape, John Star was ready on the platform of the north tower, his pocket light tube in hand, its coils rewound to increase its brilliance a thousandfold.

Into the purple, star-shot night he flashed it, forming again and again the code letters of the legion signal of distress. The overloaded electrodes fused in a few minutes, burned out. But Jay Kalam was ready with another tube, with its potential stepped up in the same way; he kept flashing the silent appeal for aid.

It was incredible to John Star, as he stood there, that Aladoree had been with him that morning on the same platform. Incredible, when

now she was lost somewhere in the black gulf of space, perhaps ten million miles away. With a little ache in his heart, he remembered how she had looked—slender and straight and cleanly molded; eyes candid and cool and gray; sunlit hair working miracles in brown and red and gold.

His determination to restore her to safety could hardly be less, he knew, were she just an ordinary bit of humanity, not the keeper of the system's most priceless treasure.

It was long after midnight when the last light tube went out.

Then, until dawn, they waited on the platform, scanning the star-pricked sky, anxious for the blue rocket-exhausts that would brake the descending ship. But they saw no moving thing, save the faint tiny sparks of the moons of Mars, the hurtling inner one crossing the sky backward, from west to east, twice during the night.

Giles Habibula was with them, not watching, but lying on his back, peacefully snoring. He woke with the dawn and went down to the kitchen. Presently he called up that breakfast was ready, and the others were about to leave the tower in despair, when they heard the roaring rockets of a ship landing.

A long silver craft, an arrow of white flame in the morning sun, it dropped across the fort, pushing ahead the blue flare of its rockets.

"A legion cruiser!" John Star exulted. "The latest, fastest type."

His blue eyes keener than they appeared, Hal Samdu read the name on its side:

"Purple—something—she's the *Purple Dream!*"

"*Purple Dream?*" echoed Jay Kalam. "That's the flagship of the legion fleet; the ship of the commander himself!"

"If it's the commander's ship," John Star said slowly, his high spirits falling, "I'm afraid it won't bring us much good. Commander Adam Ulnar is Eric Ulnar's uncle. The real leader of the Purples.

"It was Adam Ulnar who sent Eric to Yarkand; Adam Ulnar who found Aladoree was hidden here, and sent Eric to be captain of her guard. I'm afraid we can't expect much but trouble from the commander of the legion."

VII.

THE FOUR went out of the old gate, Giles Habibula still eating morsels he had stuffed into his pockets, and down the boulder-strewn slope to the *Purple Dream*, lying amid the yellow dunes of the sand desert.

Her officer, a man too old for his rank, thin, stern, with a jaw like a trap, looked down at them from the open air lock.

"You flashed a signal of distress?"

"We did," said John Star.

"What's your difficulty?"

"We must leave here. We have an urgent matter to report to the Green Hall."

"What's that?"

"It's confidential."

"Confidential?" the officer repeated, looking down with frosty eyes.

"Very!"

"Come aboard, then, to my stateroom."

They climbed the accommodation ladder, followed him through the great valves, down the narrow deck into his cabin. He closed the door and said:

"You need keep nothing back from me. I'm Madlok, Commander Ulnar's first officer and completely in his confidence. I know that you

men were stationed here to guard the most valuable possession of the human race. What account have you to make of it?"

"You mean——"

"I mean AKKA!" snapped the officer.

"It is lost," said John Star. "A traitor was sent here——"

"Lost? You have betrayed your trust?"

"It is gone. It must be recovered. And the news of its loss must be communicated at once to the Green Hall."

"I shall take care of any reports. The four of you were merely subordinates, I assume. I shall take you to headquarters to account for your failure."

"The search must begin at once," said John Star urgently.

"I'm not accepting orders from you, sir, if you please. And I shall take the four of you at once to Commander Ulnar, at his estate on the outer moon."

"May I go back, sir, just a few minutes?" appealed Giles Habibula.

"Some things I must bring——"

"What things?"

"Just a few mortal cases of old wine, sir."

"What! Wine! We're taking off at once."

"If you will pardon me, sir," gravely offered Jay Kalam, "we were not under your command."

"Your signals were seen from Commander Ulnar's private observatory, on Phobos," snapped Madlok. "Inferring—quite rightly—that you had betrayed your trust and lost AKKA, he sent me to bring you to the Purple Hall. I trust that you will condescend to obey the commander of the legion. We take off in twenty seconds!"

John Star had heard of the Ulnar estate on Phobos; the magnificent

splendor of the Purple Hall was famous throughout the system.

The tiny outer moon of Mars, only some ten miles in diameter, had always been held by the Ulnars, by right of reclamation. Equipping the barren, stony mass with an artificial gravity system, synthetic atmosphere, and "seas" of man-made water, planting forests and gardens in soil manufactured from chemicals and disintegrated stone, the planetary engineers had transformed it into a tiny paradise.

For his residence, Adam Ulnar had obtained the architects' plans for the Green Hall, the system's colossal capitol building, and duplicated it room for room, but on a scale an inch larger to the foot, and not in green glass, but in purple, the color of the empire.

The *Purple Dream* dropped upon the landing stage atop the square, titanic tower. Beyond the edge of the platform, when they disembarked, John Star could see the roofs of the building's great wings, glistening expanses of purple stretching out across vividly green lawns and gardens. Farther, the surface of the tiny planet, massed with dark, luxuriant verdure, seemed to curve down with increasing abruptness against the star-pierced purple-blue of the thin air, so that he felt as if he were perched insecurely on the top of a great green ball.

They dropped in an elevator three thousand feet, escorted by Madlok and half a dozen men from the cruiser, and entered an amazing room.

Corresponding to the Green Hall's council chamber, it was five hundred feet square, arched with a huge dome, and columned walls illuminated with colored lights to secure

effects of indescribable vastness and splendor.

In the center of the floor, occupying a space relatively small, were a thousand seats, corresponding to the seats of the Council of the Green Hall—all empty. Above them, on a high dais, stood a magnificent gem-canopied throne of purple crystal—vacant. On its seat lay the old crown and scepter of the emperors.

They marched, astonished and awed, across the vast floor, under the whispering vault, around the dais. Behind the throne they entered a small room, beyond a guarded door. There Adam Ulnar, commander of the legion of space, master of all this splendor and the immense wealth and power it represented, was sitting at a simple table.

THOUGH twice Eric Ulnar's age and almost twice his weight, Adam Ulnar was as handsome as his nephew. Square-shouldered, erect, he wore a plain military uniform. The calm strength of his face—nose prominent; mouth firm; blue eyes deep-set, wide apart, steady—contrasted with Eric's weak and passionate countenance. His long hair, nearly white, lent him the look of distinction that Eric had from his flowing yellow locks.

John Star, to his surprise, felt an immediate instinctive admiration for this man of his own blood, about whose vast wealth and influential power he had heard so much. He understood how a man of such powerful and persuasive personality could inspire enthusiasm for the cause he represented.

"The men, commander," Madlok reported briefly, "who lost AKKA."

Adam Ulnar looked at them without surprise, a faint smile on his distinguished face.

"So you were the guard of Ala-

doree Anthar?" he said, his voice well-modulated, pleasant. "Your names?"

John Star named his companions. "And I am John Ulnar."

The commander smiled again, stood up behind the table. "John Ulnar? A kinsman of mine, I believe?"

"So I understand."

He stood still, coldly unsmiling.

Adam Ulnar came around the table to greet him, warmly courteous. "I'll see you alone, John," he said, and nodded to Madlok, who withdrew with the others.

Then he turned to John Star, urged cordially: "Sit down, John. I wish now that we had met sooner, and in less strained circumstances." And he added, smiling: "You made a brilliant record at the academy, John. And I've a career planned for you, equally brilliant."

John Star, remaining on his feet, his face a little grim, said: "I suppose I should thank you, Commander Ulnar, for my education and my commission in the legion. A few days ago I should have done so very gratefully. But it seems that I was intended merely for a dupe and a tool."

"I wouldn't say that, John," protested Adam Ulnar. "It's true that events did not take place just as I had planned—Eric is taking affairs too much into his own hands. But I had you placed under his direct command. I was planning—"

"Under Eric!" John Star burst out hotly. "A traitor! Much as I admired him, that's what he is! Obeying his orders, I helped betray the legion and the Green Hall."

"Traitor is a harsh word to use, John, just because of a political difference."

"Just a political difference! Do you admit to me openly that you are

false to your own trust as an officer of the legion? You, the commander himself!"

Adam Ulnar smiled at him, warmly, kindly, a little bit amused. "Do you realize, John, that I am by far the most wealthy man in the system? That I am easily the most powerful and influential? Doesn't it occur to you that loyalty to the Purple Hall might be more to your advantage than support of the democracy?"

"Are you trying, sir, to make a traitor out of me?"

"Please, John, don't use that word. The form of government I stand for has a sanction far older than your silly ideas of equality and democracy. And, after all, John, you are an Ulnar. If you will consider just your own personal advantage, I can give you wealth, position, and power, that you will never attain with your present impractical attitude."

"Then I will not consider it."

John Star was still standing stiffly in front of the table. Adam Ulnar came around beside him, took his arm persuasively.

"John," he said, "I like you. Even when you were very small—I suppose you don't remember when we were ever together—you displayed qualities that I liked. Your courage, that stubborn determination that is about to keep us apart now, was one of them—something left out of my nephew's disposition."

"I had no son of my own. And the family of Ulnar isn't very large—just Eric, the son of my unfortunate elder brother, and you and I. Eric is twelve years older than you are, John. He was rather pampered in his youth. He was always told that one day he would be emperor of the Sun; he was given attention, waited on.

"And I don't like the results altogether. Eric is weak, headstrong, and yet a coward. This alliance with the creatures of Yarkand was a cowardly thing—he made it against my advice, because he feared my own plans for the revolution would fail.

"Anyhow, with you I tried a different plan. I put you in the academy, left you ignorant of what your destiny might be. I wanted you to learn to depend on yourself, to develop some character and resource of your own.

"This last experience has been a sort of test, John. And it has proved, I think, that you have the courage and independence I had hoped for. I like you for those things."

"Yes?" said John Star coldly, and waited.

"The empire is going to be restored. Nothing can halt our plans now. The Green Hall is doomed. But I don't want to set a weakling back on the throne. Ulnar is an old name, a proud name. We don't want it disgraced, as a weakling might disgrace it."

"You mean——" cried John Star, astounded. "By all this, you mean that I——"

"That's it, my boy!" Adam Ulnar was smiling at him with pleasure on his face, pride, and hope. "That's it. It is not Eric who shall be emperor of the Sun, when the Green Hall surrenders. It shall be you!"

John Star stood motionless, looking into his pleased, smiling face, and he added:

"Yes, you shall be emperor, John. Your claim is really better than Eric's or mine. You are in the direct line of descent. I have proof."

John Star shook off his hand, then moved back a little, laughed.

"What's the matter?" he asked, suddenly anxious. "You don't——"

"No!" he exclaimed. "I don't want to be emperor. If I were emperor, I should abdicate, restore the Green Hall."

Adam Ulnar went slowly back behind the table and sat down heavily, wearily. A long time he sat silently, watching John Star's tense, determined figure with thoughtful eyes.

"I see," he said at last. "You meant that. Your education has had a result I hadn't foreseen. I suppose it's too late to change you now."

"I'm sure it is."

Again Adam Ulnar mused a while, and then stood up suddenly, his face hard with decision. "I hope you understand the situation, John. Our plans are going ahead. If you won't be emperor, Eric will. Perhaps, with my advice—— Anyhow, the Green Hall is doomed. And I suppose with your attitude, you will remain against us?"

"I will!" John Star promised warmly. "I hope for nothing more than a chance to defeat your plot."

Adam Ulnar nodded; for an instant he almost smiled. "I knew you would. And that means—I'll be as honest with you as you are with me—that means that you must spend your life in prison. Unless it becomes necessary to kill you. I have too much confidence in your ability and your determination to set you at liberty."

"Thank you," said John Star, smiling grimly.

Adam Ulnar came to him again, his face a little softer. "Good-by, John. I'm sorry we must part this way."

He laid his hand a moment on John Star's shoulder, was suddenly concerned at his involuntary shud-

der of pain. "You've been hurt, John?"

"Some weapon from the black ship. It made a greenish burn."

"Oh, the red gas!" He was suddenly very grave. "Open your tunic and let me see. No, it isn't very serious—not yet. But the red gas has fearful effects—bodily decomposition, insanity. Those men, exposed to it on the planet of Yarkand. Fortunate I discovered it—I'll have you given immediate treatment, with the formula we've worked out. I think we're in time."

"Thank you," said John Star, less stiffly.

"I'm sorry, my boy, that I'll never be able to do more for you. Sorry that you choose to go to prison from the hospital—not to the empty throne in the Purple Hall."

VIII.

IN A ROOM in the hospital in the south wing of the colossal Purple Hall, a grimly capable, tight-mouthed doctor washed John Star's injury with a blue, palely luminescent solution, covered it with a thick salve, bound it and made him go to bed. Two days later the old skin began to peel off in hard, greenish flakes, and new, healthy flesh showed under it.

"Good!" said the laconic physician, bending to examine him. "Not even a scar. You're lucky."

John Star practiced one of the wrestling holds he had learned in the academy. He hastened out into the corridor in the doctor's clothing, leaving him bound, gagged, unhurt.

Four men in legion uniform met him at the door, armed, unsurprised, courteous.

"This way, please, John Ulnar, if you are ready to go to the prison."

John Star smiled grimly, nodded.

The prison was a huge, lofty square room under the north wing of the Purple Hall. Its walls were of white metal, sanitary, impregnable. It had triple doors, massive, sliding slabs of metal, with guards in the short halls between. The mechanism permitted only one door to open at a time, so two always sealed the opening.

The cell block stood in the center of the great room, a double tier of big, barred cages, reaching halfway to the ceiling, each with bunk and other facilities for one occupant, partitions of sheet metal separating them. The single guard who remained in the room paced steadily around it.

John Star, locked in alone, threw himself hopelessly on the bunk. He had set his heart on escape.

But escape presented heartbreaking difficulties. To leave the locked cell; evade the sentry outside—who carried only a club, lest some prisoner snatch his weapon; pass the triple doors, with guards between; to get through the endless, labyrinthine corridors of the Purple Hall, a veritable fortress; finally to leave the tiny planet, which was virtually a private empire of Adam Ulnar, policed by his loyal followers—it all seemed utterly impossible.

He heard a wheedling voice from the next cell:

"Ah, have you no heart, man? We've been locked in this mortal place a blessed time, on bread and water, on precious little more. Is your heart of stone, man? Surely you can bring us something more for supper. Just a morsel, to give us an appetite for the prison fare."

"To give you an appetite, you bag of tallow?" retorted the sentry good-naturedly, walking past. "You eat more now than seven men."

"Ah, come, man, and bring me a bottle of wine. Just one blessed bottle. It'll help me forget the court-martial that's coming, and the lethal chamber beyond it."

"Enough! Keep quiet! I bring you all I can. Six bottles you've had already to-day! No more, the warden said. At that, I never knew such generosity. It's only by the special order of the commander himself that you get a drop. And no more talking, now! That's regulations."

John Star was glad to hear again of his companions, though it was no good news that they were waiting for court-martial and sentence. Adam Ulnar would be ruthless in eliminating such men as these, whose unfaltering loyalty to the Green Hall opposed his plots.

He was lying on the bunk when he heard a low, cautious tapping on the metal partition by his head, and he sprang abruptly from his apathy of despair when he realized it was forming letters in the legion code:

"W-H-O?"

Quickly, cautiously, he replied: "J U-L-N-A-R."

"J K-A-L-A-M."

He waited for the sentry to pass again, tapped: "E-S-C-A-P-E?"

"C-H-A-N-C-E."

"H-O-W?"

"G-U-A-R-D-S C-L-U-B."

For the most of a day and night John Star watched that club, as it passed at regular intervals in front of his cell bars; a simple, eighteen-inch stick of wood, grip taped, slender part above wrapped with green-enameled wire, for reënforcement. He did not see how it could be very useful, but evidently it was the beginning of the plan of escape conceived by Jay Kalam's deliberate, analytic mind.

Each guard was locked in the big

room with them for four hours at a time, pacing around the cell block, reporting through a speaking tube at fifteen-minute intervals.

Their habits differed. The first, good-natured man carried the club safely in his farther hand. The next walked a precise, cautious beat, well out of reach. The third was not so careful, swinging the club by a leather thong, sometimes from one wrist, sometimes the other. He must swing it sometime, John Star thought, within a foot of the bars. He waited, unobtrusively alert, until the guard was changed again. And his chance had not come.

Again the good-natured man. Then the precise, cautious man.

Then, again, the one who swung the club. John Star waited an hour, alert without seeming to be—and the chance did come.

EVERY MINUTEST motion John Star had planned, rehearsed in his mind. He was keyed up, ready; his trained body worked with lightning quickness. He sprang, soundlessly, when the club began its swing. His arm slipped through the bars. His straining fingers snapped around the wood. He braced knee and shoulder against the bars, jerked.

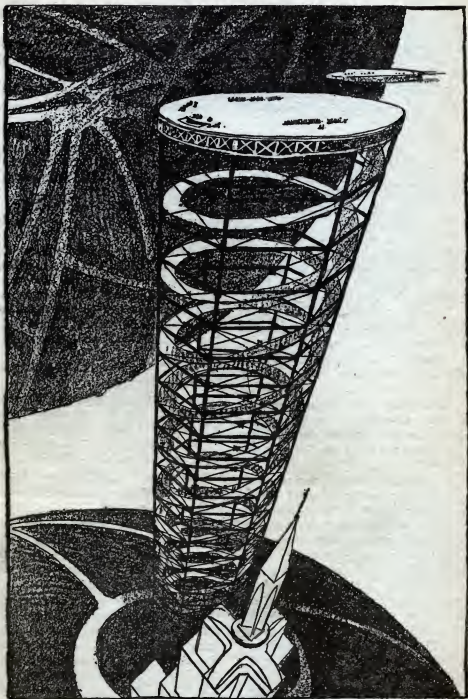
It was all done before the guard had turned his head.

The leathern thong on his wrist jerked him against the cell; his skull struck the bars; he went down silently.

John Star slipped the thong over his limp hand, whispered: "Jay! I have the club!"

"I hoped you might," said Jay Kalam quietly, quickly, from the next cell. "If you will please hold it out to Giles——"

"Outside here, lad! Quick, for life's sake!"



The ship slid down to the landing stage that reared high above the tiny globe.

He thrust the club back through the bars, felt Giles Habibula's fingers grasp it.

"Shall I search him?" he whispered. "His keys——"

"He had none," said Jay Kalam. "For fear this would happen. We must depend on Giles."

"My father was an inventor of locks," wheezed the voice from the other cell, absent, preoccupied. "I learned a higher calling. Giles Habibula was not always a crippled old soldier in the legion. In his nimble days——"

The voice drifted away. John Star restrained his curiosity, waited. Giles Habibula was busy in the next cell. His breath became audible, panting. He muttered, sometimes:

"Mortal minutes! This wire! Life's precious sake! Ah, old Giles——"

"Hurry, Giles!" implored Hal Samdu, from the cell beyond. "Hurry!"

There were tiny, metallic sounds.

"We've five minutes yet," said Jay Kalam, voice calm and low. "Then the guard's report is due. When they don't hear him——"

The sentry groaned, then; moved. John Star silently restored him to unconsciousness with a scientific trick he had learned at the academy, a pressure on certain nerves.

His door, a moment later, swung open. He stepped out, beside sweating, panting Giles Habibula, who was already busy at the lock of the next cell, with a little twisted bit of green wire—the wire, he recognized, with which the club had been reinforced—his thick hands oddly sure and steady.

"Wasn't always a lame, useless old soldier in the legion," he wheezed abstractedly. "When old Giles was young—until an unfortu-

nate affair on Venus, before he joined the mortal legion——"

The door opened, let out Jay Kalam; the next gave freedom to gigantic Hal Samdu.

"Now what?" inquired John Star.

They had perhaps four minutes in the huge room before the inevitable discovery, when the guard failed to report. It was massively metal-walled, windowless; its one door closed by three huge valves, armed men between them.

"Up!" said Jay Kalam quietly, as he ever spoke. "On top of the cells."

John Star leaped up the bars; the others followed, Giles Habibula puffing, hauled by John Star from above, pushed by Hal Samdu beneath. They were on the metal net that covered the second tier of cells, the white ceiling still fifteen feet above.

"Now!" whispered Jay Kalam. "The ventilator."

He pointed to the heavy metal grating in the ceiling above, from which a cool draft struck them.

"Your part, Hal! If ever you used your strength——"

"Lift me!" cried the giant, his hands ready.

They lifted him.

Puffing Giles Habibula and Jay Kalam stood on the netting, John Star, lightest of the four, on their shoulders, while the gigantic Hal Samdu stood upon his.

The ventilator grille was strong, though it had been put where men were not likely to reach it. Hal Samdu's immense hands closed about its bars; he strained; John Star heard mighty muscles cracking. His breath came in short, laboring gasps.

"I can't——" he sobbed. "This way——"

"We've one minute longer, perhaps," said Jay Kalam.

The giant lifted himself from John Star's shoulders, doubled his body, planting one foot on each side of the grating, hanging by his arms.

"Catch him!" cried John Star.

Hal Samdu straightened, with his feet on the ceiling. Strained metal snapped. He fell down, headforemost, fifteen feet, the grate torn out in his hands. The tube yawned black, above, a cold stream of air pouring out of it.

The three caught him in their arms.

A whirring from the door of the great room! The mechanism was opening the inner valve. In seconds the armed guard would appear to investigate the silence of the speaking tube.

"You first, John," said Jay Kalam. "The lightest. Help us."

They lifted him to the opening. He hung his knees over the edge, swung down his body, hands reaching.

Giles Habibula came first, puffing, hoisted from beneath. Then Hal Samdu, who lowered John Star, a living rope, so that Jay Kalam could catch his hands.

"Halt!" rang the order from the opening door. "Or we fire to kill!"

They scrambled into the narrow horizontal tunnel of the ventilator tube. Another order barked. The blast of a proton gun lighted the dark tube with brief, intense violet, spattered fused metal behind them, reached them all with numbing electric shocks.

They tumbled ahead into cramped black spaces.

IX.

THE PASSAGE they had entered was horizontal, metal-walled, square, not three feet high, and—as

Giles Habibula put it—"dark as the gut of a mortal whale."

They scrambled along it on all fours, bruising limbs and heads in their haste upon rivets and interior braces. Giles Habibula was crawling ahead, then Jay Kalam, Hal Samdu, and John Star behind.

The guards must have delayed to find a ladder—such an escape into the ventilation system was apparently unexpected and disconcerting—for at first there was no sound of pursuit. They dragged themselves through silent darkness, the strong wind from the fans rushing about them, Giles Habibula puffing like an engine.

"If it branches," gasped Jay Kalam, "we must turn against the air current. That will guide us toward the fans, keep us out of the small dividing passages. We must get past the fans, through the intake. If we get lost, they'll have us trapped like rats—"

He stopped. The wind against their faces had abruptly ceased.

"They've shut off the fans," he said. "We haven't even the air to guide us."

"I hear voices," John Star whispered. "Behind us—following."

"My life's sake!" wheezed Giles Habibula, a little later. "A mortal wall! I bumped my old head into it."

"Go on!" said Jay Kalam, behind him, quietly urgent. "Feel about. There must be a way."

"My blessed head! Ah, yes, there is a way. Two ways. 'Tis another passage we're entering. Right or left?"

"A blind chance, since they stopped the fans. Say, right!"

They hastened on for another while on hands and bruised knees.

A gasp from Giles Habibula. "My mortal life! A blessed pit! I half

fell into it. For life's sake, don't push so! I'm sprawling on the edge!"

"The shaft turning down, it must be," said Jay Kalam. "We turned wrong, I'm afraid—the intake should be above. But it's too late to turn back. Feel about. There should be rungs—a ladder. If the shafts should need to be cleaned, or repaired——"

"Ah, yes, right you are, Jay. I find them—precious flimsy they seem, for such a man as I. Ah, Jay, I should have stayed back in the cells, let them torture me and starve me and beat my blessed old body as they would, court-martial me and seal me in their precious lethal chamber. Old Giles Habibula is too old, Jay, and too lame, to be running through blessed rat holes on his knees, and dancing up and down flimsy little ladders in the dark, like a mortal monkey!"

Yet he had slipped over the edge in a moment, was tumbling down the dark ladder, the others behind him, punctuating his phrases with the gasps of his panting breath.

"A floor!" he wheezed presently. "Ah, it's all up now, I'm mortal afraid. I've struck bottom. No way out but tiny pipes a mortal mouse couldn't creep through."

They explored the walls about them with anxious fingers, found no branching passage large enough for a man to enter.

"We should have turned left, back there," said Jay Kalam.

"We must go back," John Star cried. "If we hurry, perhaps we can beat them."

Now ahead, he rushed up the ladder, reached the horizontal shaft, plunged down it, reckless of bumps and bruises. Hal Samdu kept close at his heels, Jay Kalam not far behind. Giles Habibula, heaving des-

perately, called out from far in the rear:

"Don't desert old Giles, boys! Wait for me! Wait just a second, for poor, lame old Giles Habibula to snatch a mortal gasp of breath!"

John Star saw the white flicker of a pocket light tube on the wall ahead, again heard voices. The pursuing guards, then, were just approaching the intersection. He scrambled desperately to reach it ahead of them.

The light flashed again, briefly, out of the intersecting tube, against the wall. He crouched behind the angle, breathing quietly as he could. When Hal Samdu came up, John Star cautioned the giant to silence with a pressure of his foot.

Far back, he heard Giles Habibula's plaintive appeal:

"Just a blessed second! Ah, a poor old soldier, sick and crippled, imprisoned and condemned to a mortal unjust death, deserted by his comrades——"

The light flashed again. The leading man was just emerging from the side tunnel. In an instant, John Star had his arm, jerked him swiftly around the corner.

IT WAS a fight in utter, unbroken darkness, for the light tube had fallen, gone out. A savage battle; the other man fought for his life, John Star for more than his. And brief; it was over before the next man in line had entered the passage.

John Star had trained himself at the academy in the science of physical combat. He knew how to take quick advantage of every weakness of the fighting body; knew the abrupt twist that snaps a bone; the sharp jab against an exposed nerve that causes paralysis and sickening pain; the quick shift of position

that turns the weight and strength of an opponent into weapons of one's own; the shrewd, sudden blow that kills.

Light, small-boned as he was, he had trained his body to the toughness of steel and lightning speed. A quick mind, a perfect body, in instant coördination. Courage born of sure knowledge of himself. He was a fighting machine, swift and deadly.

The other man tried first to use the heavy little proton gun he clutched in his right hand, discovered that his wrist had been snapped. With his left hand, then, he struck into the darkness, found that his own blow had hurled him painfully against the wall of the shaft. He twisted back, butting, striking savagely again; the force of his own lunge, skillfully diverted, broke his neck.

That was all.

When the next man flashed his light, to see how the encounter was going, John Star had the proton gun the first had dropped, already pointing down the tube.

A thin, searing flame of pure electricity, fusing metal, igniting combustibles, electrocuting flesh; a narrow, killing sword of intense violet incandescence—the proton gun is no toy.

A matter of split seconds!

The other men had similar weapons. But they held themselves a moment as the light flashed on, waited an instant to aim, to see who had been victor in that brief, savage battle. John Star did not delay.

And five men died in the shaft, the three foremost by direct, searing contact with the ray, the two others electrocuted by current passing through ionized air. When used at close range and full power, the proton gun is a deadly thing; and

John Star pulled hard on the lever, to exhaust the energy of the cell in one terrific blast.

The blinding violet flame went out. There was darkness in the shaft again, Stygian, complete; silence. The pungence of ozone in the air, from the action of the ray. The acrid smell of seared flesh and smoldering cloth.

Such swift spilling of human life sickened John Star. It was the first test of the deadly arts he had learned; he had never killed a man before. He was abruptly trembling, oddly faint.

"John?" whispered Hal Samdu uncertainly.

"I'm—I'm all right," he stammered, as he tried to get possession of himself. There had been no choice. He had been forced to do the thing, as he would be forced to kill again. A few lives, he told himself sternly, were nothing against the safety of the Green Hall. And, another part of him whispered, the safety of Aladoree.

He fumbled weakly for the dropped light tube.

"The guards——"

"They're all dead!" he whispered dully. "I killed them—all."

"You've a proton gun?" Hal Samdu did not sense his horror.

"Dead!" he muttered. But the question brought him back to the necessity of the moment. "Yes, Useless, though, until I find an extra cell. Burned out."

Forcing himself to it, he searched the body by him, found no extra cell, moved on to those the ray had slain.

Jay Kalam came up.

"You used the proton blast? Full power? No use, then, to look for weapons or light tubes. Anything electrical. Burned out."

He had found another proton gun;

it had been half fused, it was still so hot it seared his fingers, a twisted bit of useless metal.

Far down the shaft, toward the prison, he heard a command, saw a flicker of light.

"They're coming again. We must get on. To the left, this time."

Giles Habibula came noisily up, blundered into Jay Kalam, wheezing:

"Time we rested! I've lost ten mortal pounds, already, scampering through these blessed rat-holes. Ah, but I'm hot as——"

"Come on!" urged Hal Samdu. "You aren't as hot as you'll be when a proton blast catches you in the rear!"

On they tumbled, desperate, bruised, gasping for breath, again without a weapon—save for the useless proton gun—still with no light; running on all fours; crashing painfully with rivets and flanges; gasping for breath in the motionless air.

John Star, now ahead, reported suddenly: "Another shaft! Larger! Runs both up and down."

"Up, then!" said Jay Kalam. "The intake must be above us. Probably on the roof."

They ascended flimsy metal rungs in utter darkness.

"The roof!" John Star jerked out. "The landing stage, above the tower! There are ships on it!"

"Possibly," said Jay Kalam. "But we must pass the fans—easy to do if they keep them stopped. But there are guards on the landing stage, and we've no weapon."

They climbed, it seemed, interminably, up through rayless darkness. Breath came with painful effort. Muscles screamed and quivered with the agony of fatigue. Worn, blistered hands left blood on the rungs.

"I've been counting the rungs,"

Jay Kalam said once, breaking the silence of endless, tortured effort. "We must be in the great tower"

A current of air presently struck them, blowing down the shaft.

"The fans again!" muttered John Star. "I wonder why——"

He soon knew. The downward current increased. It became a tempest, a howling hurricane. It yelled in their ears with a demoniacal voice. It ripped garments from their bodies. It snatched at them with prankish hands, hampered at them with savage blows.

"Trying——" screamed Jay Kalam above the roar of it, "to blow us—off the ladder! Climb on—fans—stop them! Can't——"

The wind whipped his voice away.

JOHN STAR climbed on against the relentless pressure of rushing air, fighting the savage fingers that tore at him. The flimsy metal rungs quivered, bent beneath the strain on them. Steadily, painfully, he won his way against the tempest.

Another sound was at last in his ears, above the shrieking air—the whine of gears, whirring of great rushing vanes.

The racing fans, he knew it was, above.

Up, he battled his way, inch by hard-won inch, to the top of the trembling ladder, to a platform of metal bars. The great blades were spinning in the darkness above it, he knew; great, racing vanes that would never pause as they split his skull and splashed its contents.

Cautiously he moved, feeling his way. He was out of the main air current, now; he could move more easily. But sudden, freakish blasts still drove at him savagely, demon hands jerking him toward the swift death of the unseen blades.

Toward the whine of gears he

moved. With cautious fingers he explored the frame of the vibrating machine, found the end of a rotating shaft, thrust, slowly, carefully, with the heavy little gun, three times in vain.

Then it was snatched out of stinging fingers. Deafening crashes followed; metal grinding; bits of shattered metal flying; brief, shrill whine of an unloaded motor.

Silence, then; peace. The whirling, invisible vanes slowed, stopped. The rushing, demoniacal air was still at last. John Star waited in the quiet darkness, panting, resting his jerking muscles, while the others climbed up from where they had been clinging to the ladder.

"Now the intake," said Jay Kalam. "Before they come."

They climbed again, over the great vanes, and along the huge, motionless shaft, through the vast, horizontal intake tube, to the bottom of another vertical pit.

"Light!" exulted John Star. "The sky!"

A square bright patch at the top of the shaft. But it was not the sky, merely the under surface of the great landing stage.

Up the last short ladder, they climbed, over a low wall, and stood upon the tower's roof. Vast, flat, spaced with the openings of other similar shafts, covered with the forest of gigantic piers that supported the immense platform of the flying stage, yet another hundred feet above.

"They will know we're up here," said Jay Kalam. "From the fan. No time to waste."

They ran to the edge of the roof, climbed again, up the braces of a colossal beam. The last five feet, around the edge of the gigantic metal platform, John Star climbed

alone, peered cautiously above its level surface.

A mere hundred feet away lay the nose of the *Purple Dream*, slender bright arrow of silver metal, shimmering in the rays of the small sun that burned, blue-white, brilliant, through the thin air of Phobos.

The *Purple Dream*! Only thirty yards away. Freedom, safety, means to search for Aladoree. Trimly slender, beautiful; the newest, finest, fleetest cruiser of the legion fleet. A splendid hope; but a hopeless one. Thirty yards—

Her air lock was sealed, her bright armor impregnable. Twelve legionnaires, armed, stood in line beneath her valves, wearily alert,

What madness, for the four to think of taking her! Four tattered fugitives, bruised, exhausted, with not one weapon save their bodies, and a thousand men hunting them. What madness, when the cruiser was the system's most powerful fighting machine!

John Star knew it was madness, yet he hoped—planned.

X.

JOHN STAR climbed back to the others, mutely eager Hal Samdu, cool, composed Jay Kalam, panting, groaning Giles Habibula.

"The *Purple Dream* is there. Her valve toward us, sealed. A dozen men guarding her. But I think I see a way—a chance."

"How?"

He explained, and Jay Kalam nodded, offered quiet suggestions.

"We'll try it. We can do no better."

They climbed down the pier to the roof again, Giles Habibula complaining bitterly at the new effort, ran diagonally across among the maze of beams, climbed back to the

platform, to the edge behind the *Purple Dream*.

Again John Star looked above the surface.

No sentry, no searcher, was in view. That herculean climb up the shaft, three thousand feet, the last of them a heartbreaking battle with the wind, the exit over the blades of the great fan, had evidently not been comprehended in the plans of their pursuers.

The level platform. The sides of the *Purple Dream*, fifty feet away, a shimmering curve of armor, unbroken. Purple-blue sky above and beyond.

"Now," he whispered. "All clear."

In seconds, he was over the edge, though it was an awkward scramble, even for his trained body. The others followed, helped by him.

For all her fleetness and her fighting power, the *Purple Dream* was not large; one hundred and twenty feet long, twenty feet her greatest diameter. Yet it was not easy to get silently and unobserved on top of her, as John Star's plan demanded.

They ran beneath the black, projecting muzzle of one of her stern rockets, lifted John Star to it. Then he, again, helped the others up. From the rocket, over the glistening smoothness of her silvery hull, they inched a slow and perilous way up and forward.

Once Giles Habibula fell, started to slide down her polished shell; he gasped in mute terror; John Star and Hal Samdu caught him, drew him back. At last they were safely amidships.

There they lay, waiting, atop her flattened hull.

At first they were glad enough to rest, after the herculean climb. But the sun beat down on them, through the thin artificial atmosphere of

Phobos, blinding, intense, terrific. It drove back upon them from the mirror of the hull. They were soon blistered, gasping with heat, thirst tortured.

They dared not move; they could only wait.

John Star became increasingly aware of the peril of their position. True, they were invisible from near the ship. But the bright metal platform, at a distance, was visible, shimmering and dancing in the heat, and any one upon it there, if he happened to look closely at the top of the cruiser, could see them.

Two hours, perhaps, they had been broiling there, when they heard a bell below, voices.

"The commander. Coming on board in five minutes. The cruiser will be ready to take off at once."

"Have the valve unsealed. Inform Mr. Madlok."

"Wonder where he's bound?"

"Wants to get away, perhaps, until these escaped prisoners are captured."

"Legion men, they say. One an old criminal. All desperate fellows, dangerous."

"Hiding in the ventilation shafts, they say."

"Don't blame the commander, if he's going away. Men clever enough to break out of that prison are surely——"

"They've already killed the guards in the tubes."

"With their own guns."

Sound of feet on the stair from the elevator. Clang of metal, as the great outer valve was lowered, forming a tiny deck under the opening of the air lock. Feet on the accommodation ladder, entering the vessel. At last the crisp order:

"All clear! Close the valves!"

"Now!" whispered John Star.

He rolled swiftly off the top of

the hull, slid down feet first, struck the little platform of the lowered valve, darted inside the air lock. Hal Samdu was a second behind him, then Jay Kalam, Giles Habibula very little later, for all his bulk.

IN THE struggle that followed, John Starr and his men had the advantage of complete surprise. The first man, at the control mechanism of the valves, was not even armed. He gasped at sight of John Star, face abruptly white with panic—the fours reputation had preceded them aboard—tried to run.

John Star caught him. A sharp jab to a vital plexus, a blow near the ear, and the man dropped without having uttered a sound.

Giles Habibula came wheezing in. John Star shot at him:

"Close the valves!"

Once the air lock was sealed from within, he knew, there would be no interference from outside.

Then, the gigantic Hal Samdu close behind him, and Jay Kalam, he burst upon the narrow deck.

Two uniformed men appeared before them, gasped, started, snatched at their weapons. With a single, terrible blow, Hal Samdu sent one of them crashing into the wall. His proton gun fell spinning, Jay Kalam picked it up, turned to meet a third man, shouting, running down the deck.

John Star was upon his opponent before his proton gun came out. His skilled hands did their deadly work; the man staggered back, arm snapped, back broken. Seizing his weapon, John Star was just in time to meet Madlok, emerging from the door of his cabin.

The officer had heard the alarm. He came out with his weapon ready in his hand. Once again it was John

Star's quickness that decided the encounter, the perfectly timed reaction of a perfect mechanism. He was first with the deadly blast of electricity—merely the fraction of a second, perhaps, but enough.

They divided, then. Giles Habibula remained to guard the air lock. Hal Samdu ran toward the crew's quarters in the stern. Jay Kalam plunged down into the generator rooms, below the deck. John Star darted along the deck, forward, toward the commander's cabin and the navigation bridge.

The four were still outnumbered two to one—the full crew of the *Purple Dream* had been twelve, such a crew being ample, since the cruiser was handled almost completely by automatic mechanisms, needing men chiefly for inspection and navigation. But they had not completely lost the advantage of surprise.

John Star found two men forward. The navigator, having heard the battle, came out of the bridge room with a proton gun in his hands. Once more victory was decided by coördination, by economy of a fraction of a second.

And John Star flung open the door marked "Commander," found Adam Ulnar in his cabin, hanging up the coat that he had worn aboard.

FOR A LONG second the commander stood quite motionless, breathless, staring at the bright, menacing little needle of the proton gun, his handsome face frozen into an absolute lack of expression. He breathed suddenly, the coat fell out of his hands, he sat down heavily in the single chair.

"Well, John, you surprised me," he said at last, with a short, husky little laugh. "I knew you were a dangerous man to keep alive. I was going away until you had been dis-

posed of. But I wasn't expecting this."

"I'm glad you value your life," John Star snapped harshly. "Because I want to trade it to you."

Adam Ulnar smiled. "You have the advantage, John. Your men, I suppose, have complete possession of the cruiser?"

"I imagine so, by this time."

"Still, this brands you as pirates. All the legion fleets will be hunting you after this."

"I know. But that doesn't save you now. Do you want to trade for your life?"

"What do you want, John?"

"Information. I want to know where you have Aladoree Anthar."

He smiled, with faint relief, spoke more easily: "Fair enough, John. Promise me my life, and I'll tell you—though I don't think the information will give you much satisfaction."

"Well?"

"I didn't approve the thing, John. I wanted her brought here, to the Purple Hall. I think Eric is trusting his strange allies too far. She wasn't disposed to talk, you see. And it is difficult to persuade her, without the danger that she will die, and her secret with her."

"But where is she?"

"They took her on the black flier, John, back to Yarkand."

"To Yarkand! The other star, outside the system?"

"Yes, John. I didn't think you'd find much comfort in the fact."

"We'll go after her!"

"Yes, John; I believe you would do that." There was a note almost of admiration in his voice. "I be-

lieve you would! But you couldn't possibly hope to succeed."

"No?"

"Our allies on Yarkand, John, are a pretty efficient race. I don't like them myself—I've had contact with them. I don't approve the alliance. And I didn't approve taking the girl there. I don't trust them so far as Eric does."

"They aren't human, at all, you understand—not like any form in the system, though Eric called them Medusæ. They have a queer psychology. Rather unpleasant to deal with."

"But they're scientific, able, advanced. Weird as they are, they've splendid brains. Cold, emotionless intelligence. They're more like machines than men. They get what they want, efficiently, ruthlessly."

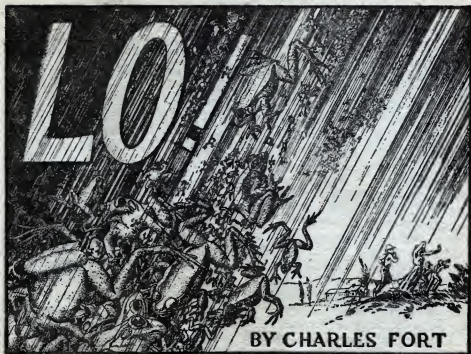
"So I think, John, that they will be able to guard the girl on Yarkand—and make her tell the secret. They have set up strange defenses to guard their planet—the Belt of Peril, that the insane men babble of."

"And even if you keep me helpless, John, the plan will go ahead. The Medusæ will come back. The legion will go over to them—the organization controls it. The Green Hall will be wiped out—the Medusæ have amazing weapons, John. And Eric will be set on the throne. On the throne you might have had, John!"

Adam Ulnar's confidence, John Star realized, was amply justified. How could four hunted fugitives defeat the space fleets of two systems? How could they hope to rescue a girl guarded on the strange planet of another, far-off star?

To be continued next month.

The three musketeers of space go on to one astounding adventure after another.
Follow them every month!



BY CHARLES FORT

*The greatest collation of factual data on
superscience in existence. Don't miss any
installments, or the story is incomplete*

PART TWO

IV.

OVER THE TOWN of Noirfontaine, France, one day in April, 1842, there was a cloudless sky, but drops of water were falling. See back to data upon repetitions. The water was falling, as if from a fixed appearing-point, somewhere above the ground, to a definite area beneath. The next day water was still falling upon this one small area, as mysteriously as if a ghost aloft were holding the nozzle of an invisible hose.

I take this account from the jour-

nal of the French Academy of Sciences (*Comptes Rendus*) vol. 14, p. 664.

London *Times*, April 26, 1821—that the inhabitants of Truro, Cornwall, were amused, astonished, or alarmed, “according to nerve and judgment,” by arrivals of stones, from an unfindable source, upon a house in Carlow Street. The mayor of the town visited the place, and was made so nervous by the rattling stones that he called out a military guard. He investigated, and the soldiers investigated, and the clatter of theorists increased the noise.

Times, May 1—stones still rattling, theorists still clattering, but nothing found out.

Flows of frogs—flows of worms—flows of water—flows of stones—just where do we expect to draw a line? Why not go on to thinking that there have been mysterious transportations of human beings?

We'll go on.

London *Times*, Jan. 13, 1843—that, according to the *Courier de l'Isère*, two little girls, last of December, 1842, were picking leaves from the ground, near Clavaux (Livet), France, when they saw stones falling around them. The stones fell with uncanny slowness. The children ran to their homes, and told of the phenomenon, and returned with their parents. Again stones fell, and with the same uncanny slowness. It is said that relative to these falls the children were attractive agents. There was another phenomenon, an upward current, into which the children were dragged, as if into a vortex. We might have had data of mysterious disappearances of children, but the parents, who were unaffected by the current, pulled them back.

In the *Toronto Globe*, Sept. 9, 1880, a correspondent writes that he had heard reports of most improbable occurrences upon a farm, near the township of Wellesley, Ontario. He went to the place, to interview the farmer, Mr. Manser. As he approached the farmhouse, he saw that all the windows were boarded up. He learned that, about the end of July, windows had begun to break, though no missiles had been seen. The explanation by the incredulous was that the old house was settling. It was a good explanation, except for what it overlooked. To have any opinion, one must overlook something. The disregard was that,

quite as authentic as the stories of breaking windows, were stories of falls of water in the rooms, having passed through walls, showing no trace of such passage. It is said that water had fallen in such volumes, from appearing-points in rooms, that the furniture of the house had been moved to a shed. In all our records openness of phenomena is notable. The story is that showers fell in rooms, when the farmhouse was crowded with people. For more details see the *Halifax Citizen*, Sept. 13.

I omit about sixty instances of seeming teleportations of stones and water, of which I have records. Numerousness hasn't any meaning, as a standard to judge by.

THE SIMPLEST CASES of seeming teleportations are flows of stones, into open fields, doing no damage, not especially annoying anybody, and in places where there were no means of concealment for mischievous or malicious persons. There is a story of this kind, in the *New York Sun*, June 22, 1884. June 16th—a farm near Trenton, N. J.—two young men, George and Albert Sanford, hoeing in a field—stones falling. There was no building anywhere near, and there was not even a fence behind which anybody could hide. The next day stones fell again. The young men dropped their hoes and ran to Trenton, where they told of their experiences. They returned with forty or fifty amateur detectives, who spread out and tried to observe something, or more philosophically sat down and arrived at conclusions without observing anything. Crowds came to the cornfield. In the presence of crowds, stones continued to fall from a point overhead. Nothing more was found out.

For many strange occurrences there are conventional explanations. In the mind of a conventionalist, reported phenomena assimilate with conventional explanations. There must be disregards. The mind must reject some data. This process, too, is both alimentary and mental.

The conventional explanation of mysterious flows of stones is that they are

peggings by neighbors. I have given data as I have found them. The conventional explanation of mysterious flows of water is that they are exudations from insects. If so there must sometimes be torrential bugs.

New York Sun, Oct. 30, 1892—that, day after day, in Oklahoma, where for weeks there had been a drought, water was falling upon a large cottonwood tree, near Stillwater. A conventionalist visited this tree. He found insects. In *Insect Life*, 5-204, it is said that the Stillwater mystery had been solved. Dr. Neel, Director of the Agricultural Experimental Station, at Stillwater had gone to the tree, and had captured some of the insects that were causing the precipitation. They were *Proconia undata* Fab.

In *Science*, 21-94, Mr. H. Chaplin, of Ohio University, writes that, in the town of Akron, Ohio—about while water was falling upon a tree in Oklahoma—there had been a continuous fall of water, during a succession of clear days. Members of the faculty of Ohio University had investigated, but had been unable to solve the problem. There was a definite and persisting appearing-point from which to a small area near a brickyard, water was falling. Mr. Chaplin, who had probably never heard of similar occurrences far from damp places, thought that vapors from this brickyard were rising, and condensing, and falling back. If so there would often be such precipitations over ponds and other bodies of water.

About the same time, water was mysteriously appearing at Martinsville, Ohio, according to the *Philadelphia Public Ledger*, Oct. 19, 1892. Behind a house, a mist was falling upon an area not more than a dozen feet square. *St. Louis Globe-Democrat*, Nov. 19—that, in Water Street, Brownsville, Pa., there was a garden, in which was a peach tree, upon which water was falling. As to the insect-explanation, we note the statement that the water "seemed to fall from some height above the tree, and covered an area about fourteen feet square."

For all I know, some trees may have occult powers. Perhaps some especially gifted trees have power to transport water, from far away, in times of need. I noted the drought in Oklahoma, and then I looked up conditions in Ohio and Pennsylvania. Rainfall was below normal. In Ohio, according to the *Monthly Weather Review*, of November, there

was a drought. A watery manna came to chosen trees.

There is no sense in trying to prove anything, if all things are continuous, so that there isn't anything, except the inclusive of all, which may be Something. But æsthetically, if not scientifically, there may be value in expressions, and we'll have variations of our theme. There were, in places far apart, simultaneous flows of water from stationary appearing-points, in and around Charleston, S. C., in the period of the long series of earthquake shocks there. Later I shall touch more upon an idea that would be an organic interpretation of falls of water in places that have been desolated by catastrophes. About the middle of September, 1886, falling water from "a cloudless sky," never falling outside a spot twenty-five feet wide, was reported from Dawson, Georgia. This shower was not intermittent. Of course the frequently mentioned circumstance of the "cloudless sky" has no significance. Water falling all the way from the sky, even at times of the slightest breezes, cannot be thought of as localizing strictly upon an area a few yards in diameter. We think of appearing-points a short distance above the ground. Then showers upon a space ten feet square were reported from Aiken, S. C. There were similar falls of water at Cheraw, S. C. For particulars, see the *Charleston News and Courier*, Oct. 8, 21, 25, 26. For an account of falls of water, "from a cloudless sky," strictly to one point, in Charlotte, N. C., according to investigations by a meteorologist, see the *Monthly Weather Review*, Oct., 1886. In the *New York Sun*, Oct. 24, it is said that, for fourteen days, water had been falling from "a cloudless sky," to a point in Chesterfield County, S. C., falling so heavily that streams of it had gushed from roof pipes.

Then came news that water was falling from a point in Charleston.

Several days before, in the *News and Courier*, had been published the insect-explanation of falls of water. In the *News and Courier*, Nov. 5, a reporter tells that he had visited the place in Charleston, where it was said that water was falling, and that he had seen a fall of water. He had climbed a tree to investigate. He had seen insects.

But there are limits to what can be attributed, except by the most desperate explainers, to insects.

IN THE *Monthly Weather Review*, Aug., 1886, it is said that, in Charleston, Sept. 4th, three showers of hot stones had been reported.

"An examination of some of these stones, shortly after they had fallen, forced the conviction that the public was being made the victim of a practical joke."

How an examination of stones could demonstrate whether they had been slung humorously or not, is more than whatever brains I have can make out. Upon Sept. 4th, Charleston was desolated. The great earthquake had occurred upon Aug. 31st, and continuing shocks were terrorizing the people. Still, I'd go far from my impressions of what we call existence, if I'd think that terror, or anything else, was ever homogeneous at Charleston, or anywhere else. Battles and shipwrecks, and especially diseases, are materials for humorists, and the fun of funerals never will be exhausted. I don't argue that in the midst of desolation and woe, at Charleston, there were no jokers. I tell a story as I found it recorded in the *Charleston News and Courier*, Sept. 6, and mention my own conclusion, which is that wherever jocular survivors of the catastrophe may have been cutting up capers, they were not concerned in this series of occurrences.

At two thirty, morning of Sept. 4th, stones, which were found to be "warm," fell near the *News and Courier* building, some of them bounding into the press room. Five hours later, when there was no darkness to hide mischievous survivors, more stones fell. It was a strictly localized repetition, as if one persisting current of force. At one thirty in the afternoon again stones fell, and these were seen, coming straight down from a point overhead. If any conviction was forced, it was forced in the same old way as that in which for ages convictions have been forced, and that is by forcing agreements with prior convictions. Other details were published in the *Richmond Whig*: it was told that the stones, which were flint pebbles, ranging from the size of a grape to the size of a hen's egg, had fallen upon an area of seventy-five square feet, and that about a gallon of them had been picked up. In *A Descriptive Narrative of the Earthquake of August 31, 1886*, Carl McKinley, an editor of the *News and Courier*, tells of two of these

showers of stones, which, according to him, "undoubtedly fell."

The localized repetitions of showers of stones are so much like the localized repetitions of showers of water, that one inclusive explanation, or expression, is called for. Insects did them?

A complication has been developing. Little frogs fell upon Mr. Stoker and his horses, but we had no reason to think that either Mr. Stoker or his horses had anything to do with bringing about the precipitation. But the children of Clavaux did seem to have something to do with showers of stones, and trees did seem to have something to do with the precipitations of water.

Rand Daily Mail, May 29, 1922—that Mr. D. Neaves, living near Roodeport, employed as a chemist in Johannesburg, having for several months endured showers of stones, had finally reported to the police. Five constables, having been sent to the place, after dark, had hardly taken positions around the house, when a stone crashed on the roof. Phenomena were thought to associate with the housemaid, a Hottentot girl. She was sent into the garden, and stones fell vertically around her. This is said to have been one of the most mysterious of the circumstances: stones fell vertically, so that there was no tracing of them to an origin. Mr. Neaves' home was an isolated building, except for outhouses. These outhouses were searched, but nothing to suspect was found. The stones continued to fall from an unknown source.

Police Inspector Cummings took charge. He ordered all members of the family, servants, and newspaper men to remain in the house for a while: so everybody was under inspection. Outside were constables, and all around were open fields, with no means of concealment. Stones fell on the roof. Watched by the police, the Hottentot girl went to the well. A large stone fell near her. She ran back to the house, and a stone fell on the roof. It is said that everything that could be done was done, and that the cordon of police was complete. More stones fell. Convinced that in some way the girl was implicated, the Inspector tied her hands. A stone fell on the roof.

Then everything was explained. A "civilian," concealed in one of the outhouses, had been caught throwing a stone. If so, whoever wrote this account did not

mention the name of the culprit, and it is not said that the police made any trouble for him for having made them work.

Then everything was explained again. It was said that the girl, Sara, had been taken to the police station, where she had confessed. "It is understood that Sara admits being a party to all the stone-throwing, and has implicated two other children and a grown native. So ends the Roodeport ghost story, shorn of all its alleged supernatural trappings."

However, the story reads more as if the girl had been taken to a barber shop. Her story was shorn, we read. It was clipped bald of all details, such as the cordon of police, search of the outhouses, and the taking of precautions, such as will not fit in with this yarn of the tricky kids. In this book we shall note much shearing.

THE WRITER, in the *Monthly Weather Review*, is not the only clipper who forces a conviction, when he can. There was a case, in another part of South Africa, not long before the bombardments at Roodeport began. In the *Klerksdorp Record*, Nov. 18, 1921, it is said that, for several weeks there had been "mysterious stonethrowing by invisible agencies," at the houses of Mr. Gibbon Joseph and Mr. H. J. Minnaar, in North Street. A detective was put upon the case. He was a logician. It was a ghost story, or it was a case of malicious mischief. He could not pinch a ghost. So he accused two Negroes, and arrested them. The Negroes were tried upon testimony given by two boys of their race. But the boys contradicted each other, and it was brought out that they were lying. They admitted that the logical detective had promised them five shillings to substantiate his syllogisms.

In the *Journal of the Society for Psychical Research*, 12-260, is published a letter from Mr. W. G. Grottendieck, telling that, about one o'clock, one morning in September, 1903, at Dordrecht, Sumatra, he was awakened by hearing something fall on the floor of his room. Sounds of falling objects went on. He found that little black stones were falling, with uncanny slowness, from the ceiling, or the roof, which was made of large, overlapping, dried leaves. Mr. Grottendieck writes that these stones were appearing near the inside of the roof, not puncturing the material, if

through this material they were passing. He tried to catch them at the appearing point, but, though they moved with extraordinary slowness, they evaded him. There was a coolie boy, asleep in the house, at the time. "The boy certainly did not do it, because at the time that I bent over him, while he was sleeping on the floor, there fell a couple of stones." There was no police station handy, and this story was not finished off with a neat and fashionable cut.

I point out that these stories of flows of stones are not conventional stories, and are not well known. Their details are not standardized, like "clanking chains" in ghost stories, and "eyes the size of saucers," in sea-serpent yarns. Somebody in France, in the year 1842 told of slow-moving stones, and somebody in Sumatra, in the year 1903, told of slow-moving stones. It would be strange, if two liars should invent this circumstance—

And that is where I get, when I reason.

If strangeness be a standard for unfavorable judgment, I damn at a swipe most of this book.

But damnation is nothing to me. I offer the data. Suit yourself.

Nobody can investigate the reported phenomena that we're taking up, without noticing the number of cases in which boys and girls, but a great preponderance of girls, appear. An explanation by those who disregard a great deal—or disregard normally—is that youngsters are concerned so much, because it is their own mischief. Poltergeist-phenomena, or teleportations of objects, in the home of Mr. Frost, 8 Ferrostone-road, Hornsey, London, for several months, early in the year 1921, can not be so explained. There were three children. Phenomena so frightened one of them that, in a nervous breakdown, she died (*London Daily Express*, April 2, 1921). Another, in a similar condition, was taken to the Lewisham (London) Hospital (*London Daily News*, April 30, 1921).

In attempting to rationalize various details that we have come upon, or to assimilate them, or to digest them, the toughest meal is swallowing statements upon mysterious appearances in closed rooms, or passages of objects and substances through walls of houses, without disturbing the material of the walls. Oh, yes, I have heard of the fourth dimension, but I am going to do myself some credit by not lugging in that explanation.

There's a story in the *St. Louis Globe-Democrat*, Jan. 27, 1888—large stones that were appearing and "falling slowly" in closed rooms in the home of Mr. P. C. Martin, Caldwell County, North Carolina. *Madras (India) Mail*, March 5, 1888—pieces of brick that, in the presence of many investigators, were falling in a schoolroom, in Pondicherry.

I can understand this phenomenon, or alleged phenomenon, of appearances in closed rooms, no more than I can understand the passage of a magnetic field of force through the wall of a house, without disturbing the material. But lines of this force do not transport objects through a dense material. Then I think of X-rays, which do something like this, if it be accepted that X-rays are aggregations of very small objects, or particles. X-rays do, or sometimes do, disturb materials penetrated by them, but this disturbance is not evident until after long continuance.

If there is teleportation, it is in two orders, or fields: electric and non-electric—or phenomena that occur during thunderstorms, and phenomena that occur under "a cloudless sky," and in houses. In the hosts of stories that I have gathered—but with which I have not swamped this book—of showers of living things, the rarest of all statements is of injury to the falling creatures. Then, from impressions that have arisen from other data, we think that the creatures may not have fallen all the way from the sky, but may have fallen from appearing points not high above the ground—or may have fallen a considerable distance under a counter-gravitational influence.

I think that there may be a counter-gravitational influence upon transported objects, because of the many agreeing accounts—more than I have told of—of slow-falling stones, by persons who had probably never heard of other stories of slow-falling stones, and because I have come upon records of similar magic, or witchcraft, in what will be accepted as sane and sober meteorological observations.

See the *Annual Register*, 1859-70—an account by Mr. E. J. Lowe, a meteorologist and an astronomer, of a fall of hailstones, at Nottingham, England, May 29, 1859. Though the objects were more than an inch across, they fell slowly. In September, 1873, near Clermont-Ferrand, France, according to *La Nature*, 7-289, hailstones, measuring from an inch to an

inch and a half across, fell. They were under an unknown influence. Notwithstanding their size, they fell so slowly that they did no damage. Some fell upon roofs, and rebounded, and it was as if these shook off the influence. Those that rebounded, then fell faster than fell those that came down in an unbroken fall. For other records of this phenomenon, see *Nature*, 36-445; *Illustrated London News*, 34-546; *Bull. Soc. Astro. de France*, June 19, 1900.

IF IN THE general electric conditions of a thunderstorm there be sometimes a counter-gravitational effect upon objects, somebody might find out how counter-gravitationally to electrify aircraft and aviators. If all work is opposition to gravitation, somebody may make a big discovery of benefit to general laziness. Elevators in skyscrapers might be run with half the power now needed. Here is an idea that may revolutionize industry, but just now I am too busy revolutionizing everything else, and I give this idea to the world, with the generosity of somebody who bestows something that isn't any good to him.

But mysterious disappearances?

Our data have been upon mysterious appearances.

If I could appeal to what used to be supposed to be known as common sense, I'd ask whether something that mysteriously appears somewhere had not mysteriously disappeared somewhere else.

Annals of Electricity, 6-499—Liverpool, May 11th, 1842—"not a breath of air." Suddenly clothes on lines on a field shot upward. They moved away slowly. Smoke from chimneys indicated that above ground there was a southward wind, but the clothes moved away northward.

There was another instance, a few weeks later. *London Times*, July 5, 1842—a bright, clear day, at Cupar, Scotland, June 30th—women hanging out clothes on a field. There was a sharp detonation, and clothes on lines shot upward. Some fell to the ground, but others went on and vanished. There was a seeming of selection, which, because of possible bearing upon various observations of ours, interests me. Though this was a powerful force, nothing but the clothes it seized was affected. I wonder about the detonation, largely because it is in agreement with a detail of still another story.

The closeness in time of these two oc-

currences attracts my attention. They were a few weeks apart, and I have no other such record, until seventy-seven years later. A sensible suggestion is that somebody, in Cupar, having read the Liverpool story, had faked a similar story from his town. A suggestion that is not so sensible is that, in this year 1842, somebody had learned the secrets of teleportation, and to avoid attracting much attention in any one place was experimenting in places far apart. It seems likely enough to me that, if there be teleportation, human beings may have come upon knowledge of it, and may have used it.

"Likely enough?" a spiritualist would say. "Has he never heard of *apports*?"

But whether it's narrowness and bigotry, upon my part, or not, I do not go to séances for data. I have collected notes upon "mysterious robberies," wondering whether a teleportative power has ever been used criminally. As to *apports*, if a medium could transport sea shells from the sea to his cabinet, he could abstract funds from a bank to his pocket. If he could, but would not, how account for his being a medium? Looking through newspapers, I have had a searching eye for something like an account of a medium, who had become mysteriously rich, in a town where there had been shortages of funds: clerks accused of embezzlement, and convicted, but upon evidence that was not altogether satisfactory. Although usually I can find data to "prove" anything that I want to "prove," I have come upon no such account, and I am sceptical as to *apports*, and think that mediums are like most of the rest of us, who are not criminals, having no exceptional abilities. However there may be criminal adepts who are not known mediums.

There was, in June, 1919, at Islip, Northampton, England, an occurrence like the occurrences at Liverpool and Cupar. *London Daily Express*, June 12, 1919—a loud detonation—basketful of clothes shooting into the air. Then the clothes came down. There may be ineffective teleportative seizures.

London Daily Mail, May 6, 1910—phenomena near Cantillana, Spain. From ten o'clock in the morning until noon, May 4th, stones shot up from a spot in the ground. Loud detonations were heard. "Traces of an extinct volcano are visible at the spot, and it is believed that a new crater is being formed." But there

is no findable record of volcanic activity in Spain, at this time—nor at any other time.

In *Niles' Weekly Register*, Nov. 4, 1815, there is an account of stones that had been watched rising in a field, near Marbleton, Ulster County, New York—that these stones had been seen to rise three or four feet from the ground, then moving horizontally, from thirty to sixty feet.

In the *Chorley (Lancashire) Standard*, Feb. 15, 1873, is a story of excitement in the town of Eccleston. At Bank House, occupied by two elderly women and their niece, streams of water started falling, about the first of February, seemingly from ceilings. Furniture was soaked, and the occupants of the house were alarmed. The falls seemed to come from the ceiling, but "probably the most singular feature of the affair is that ceilings were apparently quite dry." See back to Mr. Grottendieck's story of objects that were appearing near a ceiling, or roof, with no signs of penetrating the material. Workmen had been called to the house, and had investigated, but were unable to explain. Openness again. House packed with neighbors, watching the showers. These data would make trouble for spiritualistic mediums and their requirements for special, or closed, conditions, and at least semi-darkness, if mediums were bothered by more than unquestioning or, occasionally politely questioning, faith. If some of them have been knocked about a bit, they were relatively few. Nobody in this house sat in a cabinet. Nobody was a logician. Nobody reasonably argued that chemists, for instance, must have special conditions, or their reactions will not work out. "For instance," said nobody, "how could you develop a photograph, except in the special conditions of darkness, or semi-darkness?"

THE LOOK to me is that, throughout what is loosely called Nature, teleportation exists, as a means of distribution of things and materials, and that sometimes human beings have command, mostly unconsciously, though perhaps sometimes as a development from research and experiment, of this force. It is said that in savage tribes there are "rain makers," and it may be that among savages there are teleportationists. Some years ago, I'd have looked superior, if anybody had said this to me but a good many of us

are not so given to the "tut-tut!" as we used to be. It may be that in civilized communities, because of their storages, a power to attract flows of water, being no longer needed, has virtually died out, still appearing occasionally, however.

It could be that, in reading what most persons think are foolish little yarns of falling stones, we are, visionarily, in the presence of cosmic constructiveness—or that once upon a time this whole earth was built up by streams of rocks, teleported from other parts of an existence. The crash of falling islands—the humps of piling continents—and then the cosmic humor of it all—or utmost spectacularity functioning, then declining, and surviving only as a vestige—or that the force that once heaped the peaks of the Rocky Mountains now slings pebbles at a couple of farmers, near Trenton, N. J.

So I'd conceive of the existence of a force, and the use of it, unconsciously mostly, by human beings. It may be that, if somebody, gifted with what we think we mean by "agency," fiercely hates somebody else, he can, out of intense visualizations, direct, by teleportation, bombardments of stones upon his enemy.

Water falls on a tree, in Oklahoma. It is told of in an entomological magazine. Water falls in a house in Eccleston. I read that in a spiritualists' periodical, though I went to a newspaper for the data. These are the isolations, or the specializations, of conventional treatments. I tell of water falling upon a tree, in Oklahoma, and of water falling in a house, in Eccleston, and think that both phenomena are manifestations of one force. It is my attempt to smash false demarcations: to take data away from narrow and exclusive treatments by spiritualists, astronomers, meteorologists, entomologists: also denying the validity of usurpations of words and ideas by metaphysicians and theologians. But my interest is not only that of a unifier: it is in bringing together seeming incongruities, and finding that they have affinity. I am very much aware of the invigoration of products of ideas that are foreign to each other, if they mate. This is exogamy, practiced with thoughts—to fertilize a volcanic eruption with a storm of frogs—or to mingle the fall of an edible substance from the sky with the unexplained appearance of Cagliostro. But I am a pioneer and no purist.

Sometimes, in what I call "teleportations," there seems to be "agency" and

sometimes not. That the "agency" is not exclusively human, and has nothing to do with "spirits of the departed" is indicated, I suppose, if we accept that sometimes there are "occult powers" of trees. Some other time I may be able more clearly to think out an expression upon flows of pigeons to their homes, and flows of migratory birds, as teleportative, or quasi-teleportative. My suggestion as to the frequently reported "agency" of children, is that "occult forces" were, in earlier times of human affairs, far more prevalent, and far more necessary to the help and maintenance of human communities than they are now, with political and economic mechanisms somewhat well-established, or working, after a fashion; and that, wherein children are atavistic, they may be in rapport with forces that mostly human beings have outgrown.

Though just at present I am no darling of the popes, I expect to end up holy, some other time, with a general expression that all stories of miracles are not lies, or are not altogether lies; and that in the primitive conditions of the middle ages there were hosts of occurrences that now, considerably, though not altogether, have been outgrown. Anybody who broadly accepts the doctrine of relativity should accept that there are phenomena that exist relatively to one age, that do not, or do not so pronouncedly, exist in another age. I more or less accept a great deal that religionists piously believe. As I see myself, I represent a modernization of the old-fashioned atheist, who so sweepingly denied everything that seemed to interfere with his disbeliefs.

There are of course other explanations of the "occult powers" of children. One is that children, instead of being atavistic, may occasionally be far in advance of adults, foreshadowing coming human powers, because their minds are not stifled by conventions. After that, they go to school and lose their superiority. Few boy-prodigies have survived an education.

THE OUTSTANDING suggestion, which, however, like many other suggestions, I can not now develop, is that, if teleportation exists, it may be used. It may be criminally used, or it may be used commercially. Cargoes, without ships, and freights, without trains, may be of the traffics of the future. There may be

teleportative voyages from planet to planet.

Altogether, so many of our data are bound up with jokes, hoaxes, and flippant treatments that I think of the toy and play genesis of many practical inventions. Billions of dollars are today seriously drawing dividends from toys and games that were put to work. Billions of laughs and jeers have preceded solemn expressions of satisfaction with fat bank accounts. But this is only reasoning, and is nothing but logic and argument, and there have been billions of laughs that never turned into anything more satisfactory—though where do I get the idea that there is anything more satisfactory than a laugh?

If, in other worlds, or in other parts of one relatively little existence, there be people who are far ahead of terrestrials, perhaps, teleportatively, beings from other places have come to this earth. And have seen nothing to detain them. Or perhaps some of the more degraded ones have felt at home here, and have hung around, or have stayed here. I'd think of these fellows as throw-backs: concealing their origin, of course; having perhaps only a slightly foreign appearance; having affinity with our barbarisms, which their own races had cast off. I'd think of a feeling for this earth, in other worlds, as corresponding to the desire of most of us, now and then, to go to a South Sea Island and be degraded.

There is another view, for which I am now gathering material—

New York Times, Dec. 6, 1930—"Scores die; 300 stricken by poison fog in Belgium; panic grips countryside. Origin complete mystery. War scenes recalled." It may be that it was war.

Mostly, explanations by the scientists were just about what one would expect, but, in the *New York Telegram*, Dec. 6, Prof. H. H. Sheldon was quoted—"If there is a widespread, lethal fog in the Meuse Valley, the conclusion of science would be that it is being deliberately caused by men or women."

It may be that inhabitants of other worlds, or other parts of one, organic existence, have declared war upon this earth, and have discharged down here, sometimes under cover of fogs, volumes of poisonous gases. I have other records that may indicate something of this kind, but, reluctantly, I give up this interesting notion, as applied to the occurrence of Dec. 5, 1930, because it associates with another phenomenon, of which I shall tell later.

Only two weeks after the tragedy in Belgium, appeared the joker. The writer of an editorial, in the *New York Herald Tribune*, Dec. 19, 1930, started the conventionalizing and the minimizing and the obscurizing that always cloak events that are inconsistent with a main norm of supposed knowledge. "One may suspect that a sensational newspaper man, counting up the deaths, some dark day, in the smoky steel towns on the Allegheny River, could produce a story not far behind that from Belgium."

Seventy-seven men and women were struck dead in Belgium. Oh, there's always some commonplace explanation for these occurrences, if we only use our common sense!

Oil spurting from a ceiling—flows of blood from inanimate objects—startling, inexplicable phenomena listed by Charles Fort in next month's issue!





Illustrated by M. Marchioni

This man out of the far past looked down on a fabulous city—and saw that it was a city tragic, desolate, and lost!

AST-8

The LONG NIGHT

A Novelette by Charles Willard Diffin

GARRY COYNE was nervous. His hands, clasping and unclasping, showed it; so did his restless pacing back and forth over the full length of his laboratory. But there was nothing of fear in his level gray eyes that stared unseeingly; rather was there the tension that comes with some terrific excitement strongly repressed.

Coyne was tall and wiry, his face too lean and too strong to be handsome. He was dressed in a suit of plain gray—dressed carefully as if for some important event. But his black hair, unruly at the best, was a tangle where his hand had passed nervously and repeatedly through it.

Beside the door of the laboratory another man sat watching him. Older, a touch of gray at his temples; he watched Coyne as a doctor might watch an eccentric patient.

Coyne, turning abruptly, blundered into a glass case in which lizards crawled sluggishly about. He went on past other cases of dark-red glass where more small reptiles lay as if dead. He turned, hesitated, then came to a stop before a gray metal box on the floor.

The box was like a casket. It was large enough to hold the body of a man, and its length was further extended by a metal case at the casket's head. A cover of heavy glass was over it all; dark-red glass, like the cases that held the inanimate lizards and frogs. The glass cover was edged with a metal lip which was seated in a mercury-filled groove.

Coyne touched the box, jarring it

ever so gently. Instantly the cover swung into motion and came smoothly up. It showed, inside the casket, a series of soft pads and cushioning springs, and, in the metal case at the head, small cylinders of compressed gas with an actuating mechanism for opening them.

Strange equipment for a laboratory, as strange as the rows of glass cases and the stranger things they held. All this the man near the door must have seen; he spoke as if his curiosity could no longer be controlled.

"What's it all about?" he asked. "You sent for me, Coyne; now, for Heaven's sake, tell me what's on your mind."

Coyne swung abruptly about. His answer came almost curtly; the tension he was repressing showed in his voice.

"Listen, Mellinger! I've sent for you because I can trust you to attend to things when I am gone, to see that my body is held safely in some secure place—the Smithsonian, perhaps."

Professor Mellinger's stooped shoulders jerked back, and his lips opened. Coyne forestalled any interruption.

"Listen! Look at this!" He reached one hand into a glass case. Carefully he picked up a lizard. The creature wriggled violently in his hand, then lay still.

"How old is this?" Abruptly Coyne's voice grew strained and higher-pitched; plainly he had all he could do to restrain some surging

emotion. He answered his own question:

"More thousands of years than you or I dare dream of. This lizard came from a bed of coal. It was incased there in the Carboniferous period. I took it out, myself—this and four others. The four others died. But they were alive after countless years. Alive, I say!"

Professor Mellinger said quietly: "Go on!"

"I am going on," Coyne's tired young face lighted with an odd smile, "going further than you think. A thousand years—two thousand—I can't tell as to that. I am going into the future. I shall see the glory of that new day. I shall——"

Mellinger came to his feet. He snapped out: "Who is your doctor? Call him, Coyne. If you don't I'll give you a sedative, myself. You're raving, man."

He took one step toward Coyne, but Coyne moved more quickly. Two strides brought a flat-topped desk in the middle of the room between them. In a leather case on the desk, instruments glistened. Coyne snatched up a hypodermic syringe and stabbed the point against his wrist where a vein made a thick blue line. But he did not press the plunger.

"Wait!" he ordered sharply. "In a moment you will understand. These reptiles—suspended animation—you get that, of course. Now get this:

"In their bodies a new substance is secreted. I have isolated it. I have tested it upon animal subjects. I've worked out a dosage scale, and I know how long its effects persist in a body incapable of secreting more."

Mellinger said in a quick excitement: "You mean—you are telling me you have isolated the hormone,

the activating substance that holds a physical body dormant, that suspends animation without destroying life!" Then, shouting in sudden horror: "Not yourself, Coyne! Don't——"

Coyne smiled again; a tired smile, but it held triumph, too, and his face was alight with anticipation. Slowly, surely, he pressed the plunger until the hypodermic was empty.

"It is done." His voice was very low.

Mellinger sprang then. He gripped Coyne by the shoulder. He shouted: "You fool! You utter fool! A thousand years——"

Coyne repeated it: "A thousand years—or two or three thousand! What wonders, what marvels will be waiting——"

His face, even while he spoke, was changing. It grew more drawn and tired, then its muscles relaxed. All the driving power of that pent-up nervous energy seemed ebbing away. Coyne spoke as if speaking were an enormous effort:

"You will find—written instructions—very complete. The casket must—remain sealed. Place it—where it will be safe—while the centuries pass."

With dragging feet he crossed toward the waiting casket of gray metal and knelt, then let himself into it, his body resting on the soft pads and springs. He settled himself as one weary from a hard day's toil.

Mellinger was beside him, kneeling, looking down with horror-widened eyes. Mellinger said hoarsely:

"Speak, Coyne! Tell me it's a ghastly joke! Coyne, for Heaven's sake——"

On Garry Coyne's face that little smile came and rested for a moment. For a brief instant a ghost of his

former wild elation shone in his eyes. But his voice was a tired whisper:

"The long night—beginning——" And, after a pause: "A thousand years——" Inside the casket hidden mechanism clicked.

Slowly the glass cover came down and seated itself in the mercury-filled grooves. Under it, seen dimly through the dark-red glass, Coyne lay at rest. He was unmoving; no slightest breath disturbed his lips.

II.

BACK of those eyes, closing wearily under the red glass, was the mind, the soul, all the real self that was Garry Coyne; Coyne, plunging into unplumbed depths of a void that was darker than night.

Black nothingness wrapped him about. It was immeasurable, as if it had always been and might never end. It was timeless; time itself, like some mere lingering human dream, seemed blocked off. Utter nothingness—sleep—until——

Coyne was waking. Out of the depths he rose slowly. He was like a swimmer coming up from a deep dive where each dragging second is an age. He was gasping—drowning. Then a blast of oxygen filled his lungs and stung in his nostrils. The first beating of his heart had released it.

The gas bit in his throat. Thoughts flashed like little bursts inside his brain. Oxygen—a thousand years! He was breathing oxygen that instant! Then understanding came crashing upon him. Yet Garry Coyne, suddenly, startlingly awake, lay as one dead, while a wave of disappointment, overwhelming him, almost carried him back to the darkness from which he had come. For Coyne knew he had failed.

The time had been so short. Minutes—at the most an hour—Mellinger had been bending over him. Coyne groaned aloud in the bitter agony of his disillusionment.

He knew that he must open his eyes; knew he would see the cover lifting, actuated by the same mechanism that had released the oxygen. He would see Mellinger—laughing, without doubt; see the mocking familiarity of his own laboratory.

By sheer strength of will he forced his eyelids apart. And, having done it, with his eyes wide, he stared straight above into blackness and nothing more.

He flung upward spasmodically with his hands. They moved only inches, then struck against a hard surface. And, with that, new terror gripped him.

His sleep—he knew it suddenly and with devastating sureness—*had* been more than an hour. And Mellinger—Mellinger had not believed! Mellinger had allowed them to bury him.

Terror was a gripping hand at his heart; his thoughts ended in turmoil; the sides of his coffin were pressing him, smothering him—all in a single fraction of a second before the blackness of the grave was rent by a thin sliver of light.

He watched with protruding eyes while it grew. He saw the thin line of light broaden, saw it reflected with a dull red glow from the under side of the cover that was lifting slowly and smoothly above him. But the cover was opaque where light should have shone through—until, on the upper surface of the tilting glass, some substance which had clouded it slipped and cascaded and left the glass smudgily red.

Dust—the dry smell of it was wafted to him. He knew it was the dust of ages. Stunned, he watched

it slip and slide; heard it thud upon the floor; saw its tiny particles whirl up and roll like smoke under a high, curving roof. Then Coyne moved—moved suddenly. All his strength went into the one wild effort that flung him up to a sitting posture, took him sideways and rolled him crashing to the floor.

He never felt the fall. He knew only that he must know. *The time—the year of his awakening—where was he?* His eyes were like a madman's as he rolled in the thick dust.

It choked him. He sprang to his feet. His clothing lost its last cohesiveness and rained down to join the dust on the floor. Even his shoes were disintegrated. He stood nakedly erect, swaying slightly, weak with a faintness that left him trembling, while his eyes searched the room.

The floor was placed in the lower part of a great sphere. Walls, curving and meeting above him, were a riot of blending colors as if carved from one huge jewel. Through them ran lines of white light that flooded the sphere with brilliance.

He knew it was a sphere. And somehow he knew that it was suspended in space. He knew this even before a voice spoke out in confirmation.

"Hail, Man of the Twentieth Century!" said the voice.

It came from a cabinet let into the wall. It must have been thrown into operation by some ray interference from the opening casket. A man's voice, high and nasal, repellently disagreeable. But it was a human voice, and Coyne listened avidly as it went on:

"I, Princeps Tahgor, Chief of the Science Control, Grand Ruler of the Rulers of Earth, address you. I speak in the year five three nine of

the Rule of Science. You have slept for one thousand years.

"And still you sleep; it may be for centuries more. But this day my voice is recorded to greet you; this day we place you in the sphere; we raise the sphere on high; we fix it immovable on an invisible shaft of force, the negative gravitation of which men in your day were unaware. Only your awakening can operate the controls to remove this force; only your awakening will bring the sound of my voice.

"And now I greet you! Hail, Master of All the World! All is yours, all the lands and seas of Earth. Descend now and enter into your kingdom."

Harsh, unpleasant, with a note of mockery running through it all. It was disturbing, but Coyne had no time for speculation. For, in the floor, close by the pedestal, supporting the casket, a shutter was opening, rolling the dust aside, exposing a clear lens. Coyne forced himself to steadiness as he looked down at a section of Earth like a map.

He was above a great city aglow in the light of a setting sun. It glittered with clear opalescent tints; it was like a rainbow, crystallized, shattered, and the fragments scattered by some giant hand. There was shore line and an expanse of sea. An island slanted outward.

Coyne, snapping suddenly erect, shouted his understanding: "It's New York! There's the bay! That's Long Island!" Then the sphere was dropping swiftly beneath him; land and sea were rushing upward to meet him as the shutter closed.

He was weightless; then he was heavy. The floor pressed upward as the swift fall checked. The sphere thudded lightly, then lay still.

The voice of Princeps Tahgor called loudly: "Open!"

In the curved wall a door slid smoothly aside.

Coyne stood spellbound. Outside was sunlight of late afternoon; a soft breath of air swirled in with all the scents of the good familiar world. Out there the world was waiting—his world. There would be throngs of people—

Coyne, suddenly, was trembling in every fiber of his body.

III.

A WORLD was waiting—and, abruptly, ludicrously, Coyne realized his own nakedness. His clothes were only a mound of dusty fragments, but beside them stood a chest.

Its lid had been raised. Inside was a robe that seemed made of spun gold. It was woven metal, its threads as fine as softest silk. Sandals beneath it were a heavier weave of the same metal. There was a flask of water, hermetically sealed.

Coyne knocked off the top of the flask and drank. He found tablets in a vial marked, "Food Concentrates." These helped. Then he slipped his arms into the robe and put the sandals on his feet. And after that, more than half dazed, walking like one in a dream, he stumbled toward the door—through it—out into the sunlight's glare.

The light was blinding, but at last he saw a sloping ramp that led down to a broad plaza whose marble paving reached out to a curved balustrade. Broad steps led still farther down; and beyond all were towering masses, buildings of glass in strange colors and forms.

He was beholding marvels, yet he gave them no thought. People—men and women—that was what he wanted. The touch of human hands! But the broad plaza was empty, like

some holy place, too sacred for the tread of men.

Was he held in such veneration as that?—Coyne asked silently; then slowly he walked down the broad ramp and made his way across the empty plaza until he stood at the balustrade. And then the silence that hung over all bored in upon him.

Silence! In all the world below him was no slightest sound. Swiftly his gaze swept the vast panorama.

Colors blurred before his light-blinded eyes, but he saw in bewildering, kaleidoscopic succession the sky-piercing structures: black obsidian, emerald, topaz, rose. Lacy, gossamer bridges swung between them in incredible spans; broad streets arched in successive elevations; and through all a maze of giant skeleton tubes, twenty feet in diameter, thrust abruptly from one building to the next or curved downward to vanish in the ground.

Coyne turned and looked back. Already the sun was blocked off by the great sphere lying at rest in a cradling frame. From this lower level he could see only the upper half of the sphere; the doorway was hidden. His eyes, searching, searching, followed down the terraces to the plaza where he stood. Seeing more clearly now, he noted the pavement's unevenness, its blocks forced apart and tilted. Here and there one was raised almost on end. Vegetation shown green between the stones. Sharply Coyne swung back toward the city.

The green things were there, too—he saw them now—vines and creepers everywhere, growing from every nook and crevice, tearing the great structures apart, working their slow conquest that was bringing these marvels back to the dust. In one nearer building shaped into a

great dome a crack had opened like a gaping wound. Here a giant oak had thrust its trunk; the tree must have been a hundred years in growing.

Destruction! Even as Coyne watched, a slender tower gave way at its base. Its sky-flung pinnacle swung outward in a slow arc. Then the whole mass crumpled and changed to a cataract of metal and stone. The roar of its falling beat about him; the impact, when it struck, was like a blast.

He was deafened. The silent city took the roar and tossed it back and forth through its vast canyons; it changed the sound to thunder that rolled and boomed—until the last reverberation faded and left silence more devastating than before.

"Dead!" Coyne's lips were stiff, his voice only a hoarse whisper. "A dead city—in a dead world!"

Over the plaza the shadows of evening crept to reach on and out across the silence. The city took on strange lights. Bands of color, zigzags of white light glowing softly; a high dome seemed shimmering with flame.

Each towering structure grew luminous; each slender spire was a fairy wand. Coyne hardly sensed it. He stood unmoving while darkness deepened, and stars in the night sky pricked out their familiar patterns. Until at last his feet took him blindly across the plaza, up the ramp and back toward the sphere. With numbed hands he gathered his robe about him and entered only to freeze rigid as chaos and destruction met his eyes.

The casket—and Coyne knew the weight of it—had been flung clear across the room. Its pedestal of black onyx was a heap of fragments. The chest, on end, its cover hanging askew, was a battered wreck. And

the dusty floor was littered with scores of objects previously unseen. The shock of it brought Coyne to himself. His stupor left him. Something had been there! Something—

Crackling thoughts, swiftly changed. Not some *thing* but *some one*! Some one tremendously strong—clever—seizing the crashing thunder of the tower to screen this attack.

Coyne shot one quick glance about the room—at the curved walls, the dome above, the floor. His eyes stopped there. He did not move. Only a quivering rippled through every nerve. He was looking at footprints in the dust.

Bare feet—they had been everywhere. The toes, splayed out, only accentuated a distortion of what were unmistakably man-made marks. Yet no human could have left prints like these—only some one twice the size of a man.

Coyne, suddenly, was leaping for the door. He threw his weight against it. He cursed savagely at the ponderous metal that refused to move. He was panting; his lungs seemed bursting with the violence of his efforts.

He stopped. In a strangled voice he said: "I can't close it! I can't —" Then, as if the words had brought the inanimate metal to life, the great door swung shut.

And Coyne? Only a moment before he had been stricken by overpowering loneliness. Now all that was changed.

He was alone—in a voice choked to a whisper he thanked God that he was alone. Like some primitive man seeking safety in a cave, he stood panting. The softly lighted room was a refuge; the closing door was a barrier between him and the night. And out there in the night,

in a world weirdly beautiful, waited something—some one—for which he could not even imagine a name.

But he was safe. He could wait here—

Under his sandaled feet a fragment of glass crunched sharply. He looked down. The dust was wet where he stood; a few drops of water still glistened, all that remained of his scant supply. Near by was the battered chest, empty. The vial of food concentrates was nowhere to be seen.

Every cell in Coyne's body seemed clamoring. He was faint—the glowing walls appeared whirling about him. He must have food. And water—above all things he must have water.

Wildly staring, he was abruptly straining his eyes against utter dark. The lines of light in the sphere had winked out.

IV.

WATER! Water! Water! Throughout the night the word rang in tormenting repetition through Coyne's mind. His body, after its long sleep, seemed afire; the blood pounding through him was a hot stream. And, intensifying it, was the memory of something he had seen in the outer world: water, a shimmering sheet of it flowing over broken marble blocks.

It had rippled in the distance—but that had been in daylight. Now even his torturing thirst could not drive him out into that night.

High over his head was a single bull's-eye through which shone a star. Slowly that one point of light moved from sight and others took its place. They passed in leisurely procession, but at last they faded and the whole bull's-eye grew gray with morning light. Then Coyne stood before the door.

The door had moved when Tahgor's voice had called: "Open!" And Coyne himself had unwittingly used the word "close." Child's play—still Coyne realized that whoever devised it might have been uncertain as to his own mental perceptions; they had made this simple for him.

Coyne had a metal bar in his hand. He weighed it and swung it through the air once; then he called: "Open!"

A moment later he was outside. The morning air was cool. Again, at a word, the door closed; then Coyne, heedless of danger, broke into a run. But the bar was in his hands as he raced down the ramp, across the plaza and on toward the water that rippled invitingly in the distance. Like a thirst-crazed animal at a desert water hole he flung himself face down at the edge of a pool.

After a time he stood up, a solitary figure in a robe woven of metals still unmined back in his own past. He looked about him at a great circular space a half mile across.

It was paved. Gardens and fountains and statuary had once made it beautiful. At its center, terraces rose tier on tier; the flight of steps he had come down was one of many cutting the marble terrace walls. Above them was the plaza, then the broad ramp leading still up. And on the apex of it all, topping this man-made hill, rested the great sphere.

It must once have been a hub of the city. Great avenues had radiated from it; now these were choked with débris. Rocks, shattered glassy blocks, steelwork like gaunt, twisted skeletons. And mingled through it all, covering it, was a blanket of vines and dead leaves and dust.

It would have been depressing, but through Coyne the thrill of this

great adventure was tingling. He would explore it all later on. Now he must go in search of food—that was the first requisite—but he would stay within easy reach of the sphere. He swung his metal club to his shoulder. He was glancing about, listening alertly for any sound, as he headed toward the nearest of the great radiating ways.

He fought through the choked avenue among towering structures of iridescent hues. Their beauty was bewildering; their immensity almost overpowering. Who had built them? What had that race been like? He found the answer in a magnificent statue where the avenue widened.

It was the figure of a man in heroic proportions. He stood erect in an arrogant pose. His face, as the morning sun sent slanting rays down the great canyon, seemed alive. A cruel face, thin-lipped and rather gaunt. The eyes slanted with a reminder of the orient. The head bulged into a hairless dome. Colors had been forced into the stone; the head was yellow and the face was the same.

Some master craftsman had carved that face. He had caught every subtle expression; he had shown there the soul of the man. And he had depicted a man as cold, as heartless, and as unfeeling as the stone itself.

Coyne shivered, so strong was the repulsion that he felt. Then he moved closer to read a name, deeply carved. "Princeps Tahgor," the lettering said. Then the declaration: "I rule."

Coyne turned away. So this was what the last great race had been. This was the man who had mocked him, knowing that for the sleeper there could be only a horrible awakening. Bitter thoughts—they ended abruptly. Between Coyne and the

nearest building came a burst like an exploding shell.

The air shrieked with whistling fragments. One struck Coyne's chest and knocked him to the pavement. He saw the fragment rebound. It was glass. It would have torn him in two but for the protection of his metal robe.

From where he lay he saw another mass descending. Back of it still others curved out in glinting arcs. They were coming from one of the slender bridges high overhead. Coyne sprang to his feet and ran. His explorations were at an end; all he asked now was the safety of the sphere.

Behind him, as he struggled over the littered street, was an endless succession of bursts. Twice he glanced back and saw the deadly rain of glass. Each one of the countless bridges above him was a fort from which the missiles were thrown.

He knew at last that he was being driven—no bursts blocked the way ahead—but what it was that drove him was unseen. There was only this incessant roar of exploding glass and himself, a human, driven on and on.

Crossing the big open space at last, he shot one look over his shoulder. Still the pavement was empty. His lungs were laboring painfully as his tired muscles dragged him toward the doorway of the sphere—a doorway he never entered.

The walls of the sphere were thick; the entrance recessed. Still fifty feet away, he knew that something waited there in the shadow. In one great bound it leaped out into the light.

A woman—a giant, savage woman—that was his first thought. In the same instant he knew the folly of it. It was no woman; it was nothing

human. It was only a great she beast in human form that stood facing him.

It would have been ten feet in height if it had straightened, but it was half crouched, ready to spring. Naked, but for the scant covering of a wolf pelt about the big hips, its skin was a blotched mingling of yellow and brown. Its head was small and sunk between the shoulders. The thing was all body and bulging, sweaty muscles.

Coyne got it all in that one instant: the little wicked eyes, the straggling locks of hair about a round flat face. He sensed the beastliness of it; for a moment he even grasped dimly the idea of brutes like this being bred by men like Tahgor, bred for muscle and brute strength. Then in the flat face thick lips opened to show toothless gums, and, from the mouth, sound came to shatter Coyne's certainty of the thing's inhumanity. For it spoke human words in one hideous, snarling cry.

"Mine!" it shrieked. "Mine! Zeeten!"

From the silent city came a blood-chilling chorus in reply—but the word was different. "Kill!"—the dead walls echoed it and made it a bedlam of sound. "Kill! Kill!"

One look over Coyne's shoulder showed the pavement suddenly swarming. She beasts, great hideous things like this that he faced, they came in a surging wave from the city. But between him and the safety of the sphere was only this one. Coyne, throwing himself forward in one mad rush, swung the bar over and down.

It was wrenched from his hands before it struck, torn from him with a force that paralyzed his arms. Great hands gripped about his throat. He felt no pain, only an un-

bearable pressure as blackness closed in. The cry of the oncoming pack grew faint. "Kill! Kill!" Then even that was gone.

V.

SLOWLY consciousness came back to Coyne. Before he opened his eyes, before even he remembered, he was aware of little stabs of pain, stinging pains. They jabbed into his chest and legs; his whole body seemed attacked by little stabbing things. He moved restlessly, and at that the darts of pain ceased.

A moment's peace, then they came again; but by now he was awake. He knew that he was lying on a hard floor and that his body was bare where his metal robe had been pulled aside. Stab—stab! The little pricking pains were back; a chattering of voices was in his ears. Without moving he raised his eyelids enough to admit a thread of light.

Violet light, everywhere. The walls glowed with it; the air itself seemed tinted with it. At first he saw nothing else; then, swarming about him, were little wizened men.

Man-things that were not men! Dwarfs! They ran on noiseless feet; their clawed hands snatched at him, their sharp nails biting his skin. Blood trickled in hot lines. Like poisonous insects they darted in through the violet haze, stung and glided away. Suddenly Coyne jerked his legs under him and scrambled to his feet.

Screaming in shrill terror the tormentors fled. They huddled against a glassy wall like little hairless apes. After that first shrillness they fell silent, staring at Coyne from fearful eyes.

Their skins were mottled like the big she brute's; there were fifty of

them, perhaps. Coyne passed them by with only a glance. His whole mind was clamoring for understanding.

That big she beast had not killed him; she must have saved him instead. Why? And had the whole world been overrun with these half-human things? Could he escape? Where could he go if he did escape?

A thousand questions, and no answer for any. His gaze swept on about the room.

It was long and narrow. Walls of glass formed the sides—glass cast apparently in one piece and glowing throughout with the violet light. The room was a cell; one of many, perhaps, in a great prison. The front of it was a grillwork of bronze.

He was near the front. Through the grillwork he could see in a vast, violet-lighted room rows of machines. Wheels turned silently. Big female figures attended them, moving like ugly demons through the violet haze. And on the floor, swarming like vermin, were the young of this hideous race, utterly repulsive in their resemblance to humankind.

Coyne drew a long breath as he turned away. The air had been vile; now it almost nauseated him with the stench of putrid flesh, and, for the first time, he saw that the floor was littered with strange debris as if destructive children had torn toy animals to bits. He picked his way over feathers and clumps of fur as he moved down the room.

By now the stench seemed overpowering, coming in almost visible waves from the floor. And now bits of flesh and entrails among the litter gave mute evidence that these were no lifeless toys that had been destroyed. Understanding came to

Coyne when, halfway down the room, something moved.

Indistinct at first—then it was an animal, a dog. It got to its feet, stood wavering, then staggered forward. Blindly it dashed head-on against the wall and crumpled again to the floor. Its body was a clotted mass—horrible! Coyne saw it—then the man-things, little and beastly, came.

Singly at first, then in a rush of dwarfed bodies, they darted in, tearing at raw flesh, leaping back, shrieking their delight at each sudden spurt of blood. The tortured creature gave a shuddering cry that tore Coyne from the utter horror that had frozen him. An instant later he was among the swarm intent upon the ghastly play.

His hands closed upon one of them. He swung the screaming thing in his two hands as if it had been a club. He cleared a space above the quivering body on the floor and at last flung his living weapon into the faces about him.

"You damned little beastly apes!" The words grated through his set teeth. "How could evolution have ever produced——" Then he was stooping above their victim. Only kindness was in his hands as they brought quick death.

SHRIEKS of rage made pandemonium about him. "Zeeten!" was the cry. "Zeeten!" Suddenly the uproar stilled. In the grillwork at the front of the cell a door crashed open. The big she that had captured him was entering. "Zeeten!" her great voice roared.

She loomed hugely through the soft violet haze. She was taller by two feet than the ones in the outer room. But Coyne's whole attention went suddenly to something she held in her hand—a silver ball. From it

a short rod projected. On the end of the rod was a disk.

The pack was swarming about her. "The brant!" they screamed. "Zee-ten—the brant!" She sent them sprawling with one quick sweep; then she came toward Coyne.

Coyne backed slowly away. What new horror was this—a silver ball, and a disk on a short rod?

She held it before her as she came on. She did not rush him; she only followed while he retreated down the cell. He came to the end wall. Another grilled door was set in it. He felt the metal pressing against his back.

The big beast came close. For the first time Coyne saw her clearly—saw on the muscles of one arm a brand. And, with that, he knew the meaning of the cries.

A letter and a number—Z-10. It was seared on her left arm. And the man-things—the same mark was on them. Coyne's eyes came swiftly back to the silver ball and the disk.

The disk had grown red. It changed from red to orange; then it was white hot. In dazzling fire he read the inscription: a circle, and in it, reversed, Z-10. It was the brand of this beast and her own pack.

He read more in the same instant. Here was the answer to his questions. She had saved him for herself; he was to be branded with her mark, held here as a slave—or as a mate for this hideous thing.

She was close, her ugly features contorted. Instantly, too swiftly for his eyelids to guard, she thrust the white-hot brand once at each eye. Heat seared his eyeballs, though the deadly thing did not touch him. But in that fraction of a second, while his eyes stung with the heat, Coyne saw a vision of himself as he would be.

Blinded, helpless, he would lie on that filth-strewn floor struggling vainly. The man-pack would be tearing at him. Not killing him—he would be praying only to die. They would torture him as that animal had been tortured! He got it all while the hot disk stabbed twice—then it was lowered.

He had flung his left hand to his face. The monstrous thing whose gross body towered above him tore back the gold cloth from his arm. Coyne, trying to tear his eyes away, could see nothing but the brand. He saw it move forward. He felt the sear of it as it came close. The big beast was stooping. Suddenly Coyne drove his right fist squarely between the little savage slitted eyes.

He knew it was hopeless; knew that he didn't have a chance. He wondered dully, as his blow smashed home, at the beast's shrill scream of fear—wondered, too, as the violet light enshrouding them changed to blazing fiery red.

The red light came from behind him. It showed the body of Z-10 as she fell in a paroxysm of pain. She pitched convulsively toward him with the brand still in her hand. Her weight was behind it as it plunged against Coyne's bared arm—the smoke of his burning flesh was a quick spurt of gray.

But Coyne never felt it. He could not. His whole conscious mind was too stunned by a new miracle.

The red light flooding the room, the big beast and her loathsome pack in convulsions on the floor—all this was wonder enough. But Coyne, clinging to the grilled door with his right hand, had swung himself about. He was looking at the flaming spark from which the red light came. And, seeing beyond it, he was

staring in total unbelief at the figure of a girl.

He was half blinded by the glare, and still he could see her holding the light. She was tall, slender; a robe of blue metal cloth clung to her body in flowing curves; below the dazzling point of light a bare sun-tanned leg extended; above the light was one glimpse of a rounded breast and her face, white and bloodless in the red glow.

She stood poised as if still running. Her lips were parted. She said suddenly in a voice warm and human and vibrant with indignation: "The homoid brand—on a man! You beast—you beast!" Then her eyes met Coyne's.

Dark eyes and lovely, dark as the waving tendrils that curled about her face. Her eyes locked with Coyne's—held him. Her cheeks, her whole face, flushed swiftly.

Coyne's voice was hard to manage. He said gaspingly: "A woman—a girl—here! And that means there——"

But the full meaning was too much for mere words. Coyne threw his whole weight against the grilled door.

VI.

IT WAS the girl, touching some hidden release, who opened the door. Coyne stumbled through, but he clung to the bronze while his knees sagged. To find human companionship when he had abandoned all hope was unnerving.

The girl came close. She still held the little silvered rod whose end made a point of flaming red, but her other arm went about Coyne to steady him. Her own body, warmly vital, pressed against him, supporting him. She said in a voice that was tremulous with amazement:

"But—but we thought, I and my

people, that we were the only ones—we thought there were only the homoids left. The homoids captured you, but—but where are you from?"

Coyne could only say haltingly: "Homoids! Beasts like men! But your people—there are others—and you——" The lovely oval of her face was close to his; her eyes were tender with compassion.

Back of him in the cell hideous things screamed and writhed or stumbled to their feet and ran. Beyond, in the great hall, was pandemonium of shouting and shrieks. "Zeeten! Zeeten! Kill!——" But Coyne, looking only at the girl beside him, hearing only the echo of her voice, said again: "And you are——"

She drew away. Again her face was flushed. She said gravely: "I am Lorell. I came from far away. I saw the great sphere fall. Always my people have said that some day it would fall, then Koh-een would wake and save us. Tell me—have you seen Koh-een?"

"Koh-een——" Coyne fumbled for a minute before he got her meaning. "You mean Coyne? I was in the sphere. I've been there a thousand years and more. I am Coyne."

She tore herself away from him. The silver pencil with its blazing tip fell from her nerveless fingers and clattered upon the hard floor. The red light suddenly was gone, and once more only the violet haze filled all the rooms. The girl was wide-eyed with unbelief—then she must have known. She flung herself at his feet, and her hands pressed the edge of his golden robe to her lips. Half fearfully she raised her face.

"Koh-een!" She only breathed it. "You are Koh-een, the one who



Desperately he ran for the sphere—and then stopped in horror at sight of the monster who barred the way.

sleeps! And you have come to save us!"

From the cell and the greater hall beyond, the cries that had never ceased rose to a din of savage rage. Great bare feet, thudding on the floor, made an endless rushing roar. And the red light was gone! Coyne moved swiftly.

He swept the girl to her feet. In the same motion he forced his left hand to snatch up the little silver device, though the burn on that arm was a living pain. He held the girl to him with sudden strength.

"I'm Coyne," he said, "but, as for saving you, those devils will tear us in two. The light's broken. Come on——"

He half carried her with his one arm as they raced away down an unfamiliar corridor; then the girl sprang ahead and gathered her blue robe about her. Her slender legs were tireless; her sandals twinkled as she ran.

She called back: "Come, Koh-een; I know the way."

The corridor seemed endless. Death, coming on thudding feet, was at their backs. Lorell turned, dashed down a branching hallway to a smaller room, then into another passage. But the floor of this slanted upward, curving upon itself in a great spiral.

The girl stopped suddenly. "I am lost!" she gasped. "I did not—come this—way!"

Coyne was still holding the silver rod. The homoids might not know it was useless; it might hold them off. He reached for Lorell's hand and ran on. "There's only one way to go," he panted; "that's ahead."

THE SPIRAL ramp led always up. It cut through hallways with interminable rows of rooms; floor after floor was left behind. The vio-

let light had changed to a mellow golden glow shining from inlays in the walls when a burst of savage sound from the floor above showed that they were cut off. Behind them the spiral passage echoed to pounding feet and snarling calls. Beside them a wide corridor offered one chance of escape; then even that last avenue was blocked as naked near-human things with mottled-brown bodies leaped into view far down the hall.

Coyne, panting, staggering with weariness, half fell against a wall. Lorell stood looking at him. Hopelessness was in her eyes and the droop of her lips; yet somehow she still hoped. Coyne read it in her look. To her he was Koh-een; surely Koh-een could save them.

Somehow he threw himself from the wall. He gripped at her shoulder. Twenty feet away down the corridor a door hung open half torn from its hinges. "Come on—quick!" he said. Then they were in the room.

He did not try to close the door, hopelessly jammed with débris. He stopped dead, saw there was no other exit, then shot one swift despairing glance about.

He was in a laboratory. Sunlight flooded in through sheets of glass in the wall. It shone on dust-covered equipment, on twisted coils, intricate apparatus of pure platinum; it showed disorder everywhere: even the tables were overthrown. But, against one wall, on serried shelves, objects which struck a familiar chord in Coyne's mind were untouched.

Flasks? Containers? Jars? and of opaque material! One or two had been smashed on the floor; after that the rest had been left undisturbed. Coyne's hands were on them in an

instant; he whirled with a flask in each hand.

The doorway was a solid mass of jammed bodies; the room seemed bursting with the clamor of their cries.

Coyne shouted to the girl: "Get back! Come back here!" then hurled the flasks.

Fighting, screaming things spewed in from the door. Coyne took the reagents as they came. No time for choice. His hands flashed. Flasks crashed in rapid succession on walls and floor. One broke squarely against the nearest homoid beast not ten feet away. Then smoke came.

Brown and gray clouds! They made writhing misty folds about the homoids. Coyne got one strangling whiff as the girl reached his side. He choked:

"Hydrofluoric—bromine—Heaven knows what else! A window—quick!"

Lorell bent over suddenly. A wisp of brown haze had blown near; she was strangling. Coyne reached for an autoclave on the floor. He raised it, hurled it through a window, then dragged the girl with him as he staggered away. Then, after a long minute, still gasping, still choking, his throat cramped and afire, he felt a blast of pure air.

He turned after a time. Lorell, trembling, one hand pressed to her throat, was able to stand. Coyne stared at the heaped bodies in the door where eddying fumes still blew out into the corridor. Out there the clamor had changed; choking cries; strangling, horrible sounds; running feet, pounding away—then silence.

Coyne said soberly: "That was damnable—but it had to be done. I think there was hydrocyanic in one flask." Then he turned back to the shattered window.

Roofs, in a flat expanse, were far below; there was no escape there. Coyne saw great metal arms that lay opened as if waiting some huge thing that they might embrace—waiting, after uncounted years. Others were closed about shining, cylindrical shells. Platforms were near. There were giant metal grids and great silvery spheres above them. Gleaming signal lamps caught the sun like great empty eyes. One battery of them still blazed; even in the full sunlight the shafts of red and orange and green light were thrown upward like vivid flames.

But wreckage covered it all; Coyne passed it by—for beyond it all, out where the buildings ended about a great open space, was a marble hill; and on its top rested the sphere.

The sphere! A hiding place! Sanctuary was there, safety for a few hours however brief. He saw it so plainly. Then, swarming in the avenues, racing across the slender fairy spans, were innumerable homoid shapes. She-things! Beasts! They were searching everywhere, hunting, hunting. They were between him and the sphere.

VII.

UNTIL the coming of Lorell, Coyne had been living in a dream. Nightmare things had beset him; danger had threatened mysteriously on every hand. Now it was different. And most amazing of all was the ease with which he accepted it.

The past was gone; it was almost forgotten, so keen was the reality of this new life. But this was two days later when he and Lorell had left the city behind them and were following a great highway almost

buried under encroaching vegetation.

The two days had not been pleasant. Only the food tablets that Lorell found had kept the two alive while they ran and hid and escaped death a score of times—mere hunted things, living only from one moment to the next.

But, at last, deep in a maze of subways, Lorell had said: "This way I came, Koh-een. Now, I think, we are saved." Then, stumbling through the dark, clambering through stalled cars, dimly lighted, in which mummified figures of men and women lay grotesquely, they had emerged where the subway became a skeleton tube close by a highway.

The reality of it all no longer stunned. It was uplifting, glorious. The sun shone; they were traversing a world gone back to primitive wildness; this girl, Lorell, was beside him. And ahead— But Coyne could not quite imagine that.

"The mountains," Lorell explained—her accent was oddly fascinating; she stressed the wrong syllable at times; her speech, while understandable, was a delightful departure from the language Coyne had known—"my people live in the mountains. Beautiful mountains, too big for even the homoids to climb, but we know the way."

Coyne wondered about those mountains; he wondered still more when their cloud-wrapped crags came in sight. This was only four days' travel from New York. He scowled in perplexity until Lorell repeated what, to her, were mere legends. Slowly Coyne got the picture of what had been—

A merging of nations into two great races, each covering half the Earth. In the two Americas had been people like himself and Lorell. But in the eastern hemisphere an

Oriental race had overrun the lands. There had been wars, with armadas darkening the skies, then ripping that darkness to crashing, rending flame—until wars were impossible since each half of the globe was impregnable. Then catastrophe had altered this equilibrium of power.

In North America—Coyne placed it all in his own words although Lorell used other names—earthquakes had brought devastation. Mountains grew overnight; the ocean swept in. And, when it receded and the earth quieted, only a fragment of the white race remained. Then the Orientals had come.

Men like Tahgor, cold, brilliant scientists, cruel and heartless. They had destroyed; then they had rebuilt. When they were through only scattered bands of humanity whose skins were white instead of yellow were left in isolated parts. Contemptible bands, merely hunted for sport. And then, after many years, Tahgor's race had gone.

"The purple death," Lorell said, as if this explained all.

Coyne said softly: "A thousand years!" Much had happened in a thousand years. Then he demanded: "But the homoids—what of them?"

But here was something Lorell could not explain. The homoids had always been; they were the slaves, the workers; and they had carried the purple death although they were themselves immune.

She was leading over slopes that seemed impassible; she found narrow passes that led through to more rock-strewn, rugged slopes waiting to be scaled. And, at last, a valley, hidden deep in the mountain ranges, lay before Coyne's eyes.

A little lake took the blue of the sky and became a sparkling gem in a setting of green fields. On its shore, heaps of twisted metal, like

wreckage of airplanes, glinted in the sun. Squares of brown meant tilled soil; rude huts were scattered among them. Coyne, looking down from the last high pass in the surrounding cliffs, could even see tiny figures moving here and there. Suddenly it came to him that he was looking upon what was perhaps the last of his own race.

Lorell said timidly: "It is home, Koh-een; it is all we have. While Tahgor lived our fathers' fathers dwelt in caves—you can see the openings in the cliffs—but we have done better. Now, with you to teach us, who knows what we will do?"

Coyne said softly: "Who knows!"

His eyes were on the moving figures. Abruptly he saw no longer a dying race but the nucleus of the race to come. Under his guidance, with what he could learn and teach them in turn, what could they not do? They could reclaim the world for humanity, no less!

He still spoke softly, almost humbly: "Yes, Lorell; I will teach you. Whatever ability I have has been brought forward a thousand years for just that, it seems."

"If only the homoids do not find us——"

Some sound, almost unheard, must have flashed the fear to Lorell's mind. Her words were bitten off by a scream from the narrow pass at their backs. Coyne, whirling, knew what it was; no other beast had screamed exactly as had Z-10.

She was standing where a projecting tooth of rock almost blocked the pass. For a second she was in full view, while the sun, hard with brilliance, picked out every horrible feature. Her little head was sunk between her shoulders; her huge arms were raised in air. She was all mottled yellow and brown, a scrag-

gle of red hair, an open toothless mouth and eyes that glared white with triumph.

Once more came the hideous mockery of human speech. "Mine!" the cry tore the still mountain air. "Mine! Zeeten!"

Coyne had the silver rod. He knew it was useless, but he swung it up. Z-10 dodged back. A moment later came the thud of her feet pounding back down the trail. Z-10 was gone—but she had learned the way.

Below, in the valley, figures gathered. One among them wore a robe of gold like Coyne's. Lorell said slowly:

"The Master waits; I must report. I will tell him that I have brought Koh-een. But I must also tell him that I have brought—death."

In silence she led the way down the slope toward the peaceful valley she had called home.

VIII.

ON A PATCH of green turf Coyne paced restlessly back and forth. The sun, low in the west, threw long shadows from the trees, lances of shadow that reached out across a peaceful valley. They reached to the shore of a little lake where they dimmed the lustrous twinkling of a mass of twisted metal, the shattered aircraft that Coyne had seen; they pointed on toward the mountains that hemmed the valley on the east.

Once Coyne stopped and stared fixedly where the shadows, like fingers of doom, pointed the way. Up there on the bleak slopes was the pass; a mass of color there meant men. Men, crowded together; men armed only with spears, waiting at

the pass, guarding it, knowing they must die.

They did not move, but other, darker blots were in motion. Big bodies, tiny in the distance, clung to other jagged pinnacles or flung themselves in enormous leaps among the rocks. The first of the homoid pack had reached the pass; they waited impatiently for the thousands that would come.

Coyne turned and strode toward a cluster of maples. A man was there. He stood erect, his handsome face set in grim lines, his eyes hard. A mass of blond hair, flung back and reaching to his shoulders, gave him the look of some prophet of Bible times. He wore a golden robe. Lorell had called him the Master.

She stood beside him, as silent and motionless. Only her dark, troubled eyes moved, following Coyne's every step.

Coyne stopped and faced them. In a hard, strained voice he said: "There must be some way. You said that Tahgor's people controlled the damned beasts."

The Master's gaze was fixed on the distant pass. He said: "It is the third day. This night the homoids will come. We had hoped for great things from you, Koh-een, but there is nothing to be done." And after a pause he added bitterly: "We die to-night. Did men in your time know how to face that?"

Coyne rasped out: "We didn't quit. We kept on thinking and planning and fighting."

The Master made no reply.

Lorell said softly: "Think hard, Koh-een. Our men are brave. They will fight. It is only that we know this is the end—and we cannot plan."

"Forgive me—of course they're brave. Men with spears facing those brutes!" But Coyne was not looking at Lorell; his eyes were

fixed on the wreckage beside the lake.

"I've looked that over"—he was speaking more to himself than to the others—"but there's nothing there. Bones! Twisted scrap! But if one of those machines would fly — It couldn't though, after all this time."

Lorell caught up his thought sharply. "There is another, Koh-een; another ship of the air. I thought the Master—"

The tall man broke in: "Quite useless! The homoids would not fear a flying thing. They are long-lived; they saw flying ships by thousands in Tahgor's time."

But Coyne had sprung to Lorell's side. He gripped her shoulders. "Take me to it," he said. "If there's a single chance—" Then he was running with the girl's hand gripped in his.

The Master followed more slowly. He joined them a half mile away beyond a little hill, where, resting on the ground in a cleared field, was a great bulletlike gleaming thing.

A cylindrical body, perfectly streamlined, rested on an undercarriage of curved bars. It was not unlike the planes of an earlier time—it even had a propeller at the front—but the wings, widespread on either side, were only a gossamer of silvery threads held in a frame. They gleamed as if newly made; their sheen was like that of the ball Z-10 had held, or the slender rod that Lorell had used. Under one of the wings Coyne strained at a door in the big rounded body.

The Master said: "What can you do? Any minute my people at the pass will light the signal fire to tell that the homoids have come. I shall go and die fighting with them. The women will destroy themselves rather than suffer the fury of those

female beasts. Will you die with us or with the women, Koh-een?"

Coyne grunted at a jammed lock, then with feverish haste seized a piece of metal that lay on the ground and forced it under the door. A moment later he was pulling himself up and into a big cabin. Lorell followed.

He had expected complicated machinery; he found instead only a cylinder, solidly anchored, mounted back of the propeller. There was the pilot's seat. In front of it was a single control, a handgrip on a vertical rod that made Coyne think of the old "joy stick." On a small rheostat a lever was closed. All this back of the rounded glass nose of the ship. It was as if the big craft had landed only a moment before.

Coyne felt it so strongly; it was as if some one had placed a weapon, cocked and ready, in his hand—this ship was ready to go. Then he saw a little heap of metal cloth near the pilot's seat. From a fold a skull grinned up at him, and throughout the cabin were similar ghastly reminders that for scores of years the ship had held only a cargo of death.

Still he would not give up. He turned away, walked back a third of the cabin's length and stopped beside two plates of green metal.

THEY STOOD vertically, side by side. Each was an inch in thickness, not more than two feet high and twice as long. They were mounted in a framework of struts that spread fanwise to the body of the ship.

Coyne wondered about those struts. He said aloud: "This thing took an awful thrust. It's braced as if it held the whole load. We're about at the center of gravity, too." Then he shrugged his shoulders and went back to the bow.

He felt of the loops of cable where

two of them, red-coated, entered the metal cylinder. They were still flexible. But his hand dropped as he said despondently:

"What's the use? We don't know what drove it."

Outside the door the Master was standing where he could keep the pass within sight. He told Coyne:

"Our fathers' fathers told that these ships were made to fly by electrificeety. It came from the wings."

Coyne said in the same tired voice: "All right, it's an electric drive. But just try to find any juice now."

Idly he touched the handgrip on the control lever and moved the lever from side to side. It moved stiffly, and somewhere in the ship dry metal joints of control surfaces creaked. He moved it to the right, then to the left; forward and back. He did not mean to lift on it; he had no thought that the stick had a vertical motion as well. But he lifted—

Back of him scraping metal sounded in the cabin itself. Still holding the control he swung quickly and saw motion. In the middle of the cabin, amid their framework of struts, the plates were moving.

They creaked and groaned as stiff joints let go. They spread apart at the top where big metal arms pushed against them. Jerking, protesting, they began to form a V—and suddenly the whole ship shivered, tore free from earthy bed with a gulping, sucking sound and surged irresistibly upward.

Outside the open door, fields and trees and little huts fell swiftly away. Lorell was on the floor.

Coyne shouted: "The plates—they're lifting us! Negative gravitation—it held the sphere—Tahgor told me—"

Then he caught his breath and pulled himself together. He forced his hand that seemed frozen to the handgrip to push downward, slowly.

The plates moved back till he checked them part way. He moved the control delicately up and down until the ship was hanging in air while a wind at that high level whistled about it and set it to rocking.

Coyne called to Lorell: "Sit tight. I've got the hang of it. And now—one miracle, why not two?"

He was reaching for the rheostat. He was visioning some wizardry of science: silvery wings—a new substance capable of directly transforming radiant energy to an electric charge. He swung the handle of the rheostat sharply forward.

No groans or scraping of metal now. Inside that metal cylinder a motor had been lubricated and sealed for all time. With never a sound the propeller that had hung huge and gray and motionless outside the blunt nose swept into motion.

In Coyne's hand the flight control—the joy stick—tugged and pulled into neutral. The big ship flew slowly, then gathered speed and steadied. Mountain peaks showed ahead.

But Coyne was confident. He knew now that those fragile wings had nothing to do with lift. They were not flying surfaces, but mere gatherers of energy. The green plates, under the upthrust of negative gravitation, buoyed them up.

Lorell, at Coyne's side, was peering ahead and down. She cried out something that was half a sob.

Ragged, earthquake-gashed rock was below. Crag, canyons—and between two great peaks where a trail mounted up to a narrow pass was a column of smoke.

"The signal!" Lorell choked. "Oh, Koh-eeen, it means——"

But Coyne was looking beyond the signal smoke. He could see the farther slopes that ran down into hidden valleys, and he saw them alive with a writhing mass that fouled the clean hills. He swung the ship dizzily and headed back.

Below them the valley was peaceful under the setting sun; but shadows from the western rim were creeping across it, slowly, surely, like the darkness under the wings of death. From scattered huts women in clinging robes came together in little bands and moved toward the lake. The Master, a single figure in a shining robe, was running toward the trail to the pass. He halted as the ship came down.

Coyne helped Lorell to the ground and stood with one arm about her as the Master came up. His arm drew her close. Under her robe was the soft firmness of her body, vital, living—and soon she would be with the others.

The Master said: "There is nothing you can do." It was not a question.

Coyne said shortly: "Nothing."

The Master's voice was bitter. "Thinking, planning, never quitting; thus did the men of another age. But you have made the ship to fly—you have done that. Now you can escape. You can save yourself."

Coyne looked down into Lorell's face raised to his. The Master's words were true; he could escape, and he could take Lorell with him. He smiled as he glanced up and caught the Master's hard gaze.

Softly he said: "That's something we didn't do, either." Then he bent and kissed the girl full on the lips while he held her to him in one trembling embrace.

"Days—it has been only days," he whispered before he let her go, "yet

it seems I have loved you always. I loved you from the first; I shall be loving you at the end——”

She was still standing beside the great body of the ship, one hand pressed tightly over her heart where Coyne's hand had been. And the shadows from the western hills gathered about her while she watched. Coyne did not look back. He was following the Master toward the trail that led to the heights.

IX.

COYNE, panting over the last rise at the trail's end, saw the launching of the homoid attack.

An open space, like an amphitheater, was before him, the narrow pass beyond. Men thronged the smooth rocky floor; others, spears slanted before them, blocked the pass. Then, from that narrow cleft, a wave of shrieking beasts crashed through, and the blood lust of their savage cries mingled with the shouts of men, while the setting sun's last rays filled the amphitheater with a blood-red glow that made it like a pit from some deepest hell.

Human bodies were hurled upward while great hands tore them apart in a deluge of spurting red. Spears rose and fell and slashed again as they were sent home. The amphitheater was a turmoil of hideous blotched bodies and of men who threw themselves desperately upon them, while the quivering air shuddered under the uproar of beastly cries and the shriller scream of some homoid as the spears found her and sent her hurtling to the depths.

One instant, while Coyne and the Master stood spellbound; then again men were holding the pass while the mêlée raged at their backs. Coyne and the Master leaped in.

One mammoth homoid had fought through. She sprang clear, and her leap brought her beside the Master. In the instant of landing she gripped the struggling golden figure and swung it in air. In the same instant Coyne's hand closed about a spear beside a dead body at his feet. He thrust once outward and up.

Piercing horribly through the pandemonium came the beast's scream. The Master fell, rolled and came to his feet. A blotched body was writhing on the rocks. It, too, rolled, but toward the rim of the flat-floored space. The mountain chasms seemed bottomless—her scream died swiftly away.

But Coyne still stood in the attitude of thrusting the spear home. He could not move. He was frozen rigid by the battering impact of thoughts that the sight of that body had sent ripping through his mind.

Was it Z-10? He could not be sure. But Z-10 had fallen like that when Lorell's red light had struck! Red light! Lorell had found that one weapon—no others were to be had. Or were there? Red light! And infra-red rays! That was it! They couldn't stand the infra-red! That was why the young and the males were kept in violet light. Infra-red!

Flashing thoughts; then a plan fully formed. Coyne shouted to the Master: "Hold them!" An instant later he was in full flight back down the trail.

Down in the valley the big airship was a dark blur in the dusk. Lorell, standing as he had left her, was only a darker shadow. Coyne, running, gasping, choked out words:

"I'm going—back! There's—a chance——" Then he had torn the door open and dragged himself inside.

"Koh-eeen!" Lorell's voice, an-

guished with a certainty she could not believe, reached him as he touched the controls. "Koh-een—leaving us! Oh, my dear one!"

The great ship rose as if some giant hand had come from the Earth and thrown it bodily in air; the propeller slashed the air in thunder that changed to a high, singing whine.

But only the girl's straining, tear-dimmed eyes saw it, watching the big craft clear the eastern peaks and vanish in a star-flecked sky. Coyne, in the blunt glass nose of the ship, one hand on the control, the other jamming the rheostat to the limit of its sweep, was seeing ahead the glow of a great city whose lights had shone unendingly through the long years to guide him this night.

LIGHTS everywhere. The city was a bewildering pattern of lines and circles and spiral curves woven to intricate, dizzying forms as he drove in above. But Coyne, flying high to escape any unlighted spire, handled the ship well. Back in an almost forgotten past he had held a limited transport license, and already he had the "feel" of this ship.

Far at one side a battery of signals stabbed vertically into the night—orange; red; green. Coyne swung the ship and whipped down across a roof that was a tangle of wreckage. He dared not land; instead he swept out toward the only open place he knew and set the ship down on the plaza.

In a world silent but for some wild animal's far cry he turned and ran. The sphere, dark and motionless, rested above him on the apex of the hill; he left that behind and plunged into a débris-strewn avenue that led toward the signals, three vertical beams stabbing up into the black sky.

He stood beside them at last—massive lamps, each mounted on a round base and a slender standard. The task of moving one was appalling, until in desperation he seized one, lifted it, and found its weight negligible. New metals! He flung himself upon the cables that led out to the lamps from a silvery dome and tore them free.

Broken contacts within the dome flared into hissing flame; then the signals went dark. High voltage, Coyne was thinking grimly—heavy amperage surely—that was why the homoids had not disturbed them. Perhaps other lamps had wrought havoc in homoid hands—or the red glare might have held them off; it was the same peculiar tint as Lorc's light.

Coyne was gambling on that. He was gambling, too, on the city's being deserted. The man-things were here somewhere—he did not fear them, but, as he staggered out into the open plaza, he was praying that every fighting she was with that hideous horde in the north. Then he cursed savagely through set teeth as the night air rang shrilly with the homoid cry.

He was approaching the plane from the side, but still it was far away. He knew in one sickening moment that he could never reach the ship. Back of him not one but a score of throats were shattering the night. They were close. He turned and headed toward the sphere looming blackly above.

He never let go of the lamp; it was across his shoulders though footsteps thudded close at his back. But, before him, the door of the sphere was open—some homoid voice must inadvertently have spoken the word—and the inner room was aglow with light. One final effort flung him inside as a

great hand, smashing down, tore at his arm.

One thought, one faint hope, still was his; it gave him strength for one last wild leap aside. He let the big lamp go to the floor, though even then he managed to break its fall; then he whirled, sprang toward the cabinet in the wall; and his hand, in one sweep, crashed down over a row of projecting keys.

They were switches—he was sure of that. They might throw on Tahgor's voice—these beasts had feared Tahgor—if only Tahgor would speak again—

He stood without moving through one long second. He even found time to read lettering above some of the tumblers, *Voice control—Tri-dimensional projector*, but the words had no meaning. The first homoid was crouched. It sprang. And in the same instant the room rang with new sound. Tahgor's rasping nasal voice came on full.

It checked the beast in mid-spring. The homoid landed on all fours. At the doorway, where others had fought through and were jammed in the entrance, the screams of rage changed to a whimper of fear. Tahgor was speaking:

"The homoids will be new to you. In our laboratories we created them. The gene is the basis of life from the monogenic species of bacteriophage to the polygenic species of the primate man. By influencing the gene, and by the transposition of chromosomes and subtler bodies within the fertile cell, we have evolved a new breed. There were failures, many of them—monstrosities, others which could not reproduce—but the homoids breed true to type. They have been—"

Tahgor's strident tones went on, and Coyne, standing rigid beside the cabinet, dared not move lest he break

the spell. Then the first homoid straightened.

The big she stared at the cabinet, then howled a wordless cry of derision. She knew it was only a voice—and now Coyne had played his last card.

HE HAD failed—it would be only a moment now—and his failure meant death to the last of his race on Earth. Lorell would die; with the others she would throw herself into the lake. Coyne, picturing that, knew suddenly that silence had come again.

Tahgor's voice had ceased; yet, close before Coyne, reaching, almost touching him, the homoid stood rigid with terror. She was staring past him. Back of her the others broke and ran. Insane with fear they screamed and fought in the entrance, then were gone. The hands near Coyne's face jerked away; this big beast, too, flung herself backward, and with a second leap had vanished.

Silence then, utter soundlessness within the great sphere. Slowly Coyne turned. Not three feet away, arrayed in all the regal splendor of his kingly robes, Tahgor himself was standing.

Tahgor! His yellowed, sardonic face was drawn into sneering lines. He was not looking at Coyne; he was staring past him, apparently at nothing at all. His lips moved—he was speaking:

"By means of the tridimensional projection of my image I, Princeps Tahgor, come now—" Then Coyne understood.

For a moment he went limp. To be saved now! To be saved by Tahgor, himself! But he knew that he was looking through the image and seeing faintly the lights of the wall beyond.

Tridimensional projection—marvelous! Then he was snatching up the great lamp from the floor.

He leaped through the doorway. Back in the magically lighted room the three-dimensional image of a dead ruler strode across the floor, speaking measured but meaningless words. Coyne did not hear; his ship waited below him in the night; he was running. And later, only minutes later, though each minute seemed hours in passing, he was checking the terrific speed of the plane that ripped the air to protesting shrillness as it shot up and over the great crags of the valley rim.

The little valley was below as he circled and dropped. Above encircling mountains a full moon had crept and was pouring a golden flood down the slopes. It showed tiny man-shapes running frantically down from the pass; a dark blur of figures near the lake was breaking into smaller units that raced toward the water. And at one side, sweeping down from the hills, poured a dark, solid sea—the homoids, from another quarter, had broken through.

They stormed down from the hills, leaping across the bare fields as he shot past them and ahead. He landed on the shore of the lake, almost crushing blue-robed women and girls who fled in panic from this new threat. But above their cries Coyne heard one glad voice.

"Koh-een!" Lorell was calling. "My dear, my dear! I knew you would come!"

But Coyne was busy. Carefully and methodically he was lifting the great signal lamp to the ground, working with tense, trembling lamps at a snarl in the cables until he cleared it and flung the cable ends back into the cabin.

Inside the ship he tore loose the two cables that led into the motor.

Their ends were frayed copper; he twisted them with the cable ends he held, sliced them, made sure that they hung clear of any contact with the metal ship; then he switched the rheostat on full before he threw himself outside.

He had expected a red glare; instead the lamp was dark. One cable had pulled loose from the lamp. It spat orange fire as it lashed the ground. He leaped upon it.

Shrill cries of terror filled the night. Women, the hoarser voices of men, and over all the dreaded scream of the homoid pack. Men and women were fleeing wildly; unreal, moonlit figures on which huge snarling she-things leaped and bore them to the ground. Pandemonium! A hell of sound and fury! Yet Coyne, reaching for the cable, knew that some one was beside him—one person had not fled.

Then Lorell's voice reached him: "It is the end. I love you, Koh-een. Let me die saying it. I love you, I——"

But even then Coyne did not answer. He was on the ground, face down. He held the insulated cable in one hand. It crackled with white flame when the end brushed the lamp, but he saw the socket where that end belonged, and his other hand steadied the lamp as he rammed the cable terminal home.

At its first contact a shock tore through him and jerked his whole body into a hard ball. His hand had slipped over the bared terminal; it was wrapped instantly in flame. But, above him, shooting out like a crimson scourge, was a red beam of light; and Lorell, grasping the big lens, was swinging it around and around.

Leaping, agonized figures—she-things, contorted and horrible! His bulging eyes saw them. Their

screams rolled over him in a torrent of sound. Then came silence but for Lorell's sobbing voice.

She still swung the big lens, but at last she threw herself beside Coyne and tore him away.

"My dear—my brave one—you are not dead—you must not die! Don't leave me now! Koh-eeen! Oh, Koh-eeen!"

It was the last Coyne remembered.

X.

TO COYNE there came then a new experience. He could not describe it, nor understand it. He merely knew it was so.

A rushing—soundless, yet he heard it. A sense of being hurled at incredible speed—yet he was unmoving. Motion that had nothing to do with space! A paradox! And then he knew.

Beyond any doubt of his mind he knew that he was moving along a new dimension—moving in time. He breathed, and the tang of oxygen bit in his nostrils; and, after an interval not to be measured in hours but in days, centuries, he opened his eyes. He was in no way surprised to see the face of Professor Mellinger above him.

Again Coyne was lying in the cassette. Mellinger stood beside it. Another man's face came into view—a doctor, Coyne thought.

The newcomer smiled as he said: "Congratulations, Professor Mellinger!"

Mellinger snorted. "The adrenaline did it—then the oxygen. You understand, don't you, Coyne? I refused to be a party to your deliberate suicide."

Coyne did not move. He said very quietly: "Not suicide. But you are a party to it—you shall be—you have

been. Tenses, past, present, and future, they are all one."

"Raving!" Mellinger said.

The doctor leaned down. "Wake up," he said, "but lie still. You'll be all right now. Mellinger told me what you were trying—but this isn't a bad time to live right now. Besides there may be a fortune in this discovery of yours—who knows!"

Coyne said slowly, "I know," and smiled. How unimportant it all seemed! Then he looked at Mellinger.

"Listen," he said; "I will tell you what has happened—what will happen a thousand years hence——" And after that he talked steadily on.

"The big lamp," he concluded, "had the same generating crystal as the little light. That means that the homoid menace is ended; the world will belong to humanity once more."

But his last words held a wistful note: "I would have liked to help; I would have liked once more to have seen—Lorell——"

"Nonsense! Hallucinations!" It was the doctor sputtering. "But remarkable, really, in the clarity of detail."

Then Mellinger broke in. "Coyne!" he said. "I—I almost believe! Just as you came to, it seemed for an instant as if you were wrapped in a robe—golden. I rubbed my eyes. Then it vanished."

For a moment Mellinger stood looking down, staring unseeingly, thinking. He said slowly: "I grant you, Coyne, the possibility of synchronous existence of all events—the possibility, I say. Past, present, future—all one. And we, moving along the dimension called time, intersect them. I can't grasp it. But I can't deny it. If only there were proof——"

Proof! Coyne thought of the

countless tangible evidences, and not one of them had come back with him. Proof! He was conscious suddenly of a puckered feeling in the flesh of his left arm.

He raised his two hands. His right tore at the left sleeve of his coat and at the shirt beneath it. He rolled the sleeves back and stared. Hopefully, fearfully—then he saw it was there. He raised his arm so those beside him might see.

He gasped: "The homoid brand! Z-10 put it there. Look quick—it can't last!"

A circle—Mellinger saw it; the doctor saw it—and within the ring the mark of the beast. It was burned into the flesh. Yet, even as they watched, the flesh smoothed out, and only Coyne's strong unmarked young arm was held tremblingly aloft.

He let his hand fall. He said: "I am going—going back!" Already the room about him was blurring. Mellinger's face grew dim.

Then the doctor was bending above. He said harshly: "Wake up, I tell you! If you go under again we——"

Then Mellinger threw the man aside. "It's all right, Coyne!" Mellinger was shouting. "I'll go through with it! Can you hear me?"

Coyne spoke with difficulty through the haze that enveloped him. "You will need—to recharge—the oxygen——" Then darkness,

and a rushing sound that he felt rather than heard.

"Coyne!" Mellinger was calling. "Can you hear me, Coyne? I'll follow instructions——" His voice, fading, became merged with another—until the new voice grew strong:

"KOH-EEN!" the new voice said. A choking, heartbroken voice. It was calling to him—calling——

"My dearest one! You came to me out of the past. You can't leave me now. We need you so, Koh-een. We all need you. And I—I need you most of all——"

Her face was close above him when he dared to breathe, and his own cheeks were wet with her tears.

In all the moonlit world was silence. Men stood near, but did not speak; women and children were clustered about. Motionless, silent—all but one who stood apart and wrapped his robe of gold about him while he wept as a strong man weeps, with terrible, throat-tearing sobs.

Coyne took one long breath of the cool night air, then raised his arms, where, on one, the homoid brand was seared. He drew Lorell's lovely face close and whispered softly.

But even Lorell could not have grasped the real meaning of his words; even Lorell could never know how far distant he had been or——

"It is good," Coyne said, "so very good, my dear—to be back."

NEXT MONTH

The biggest announcement of the year
will be made in next month's issue of
Astounding Stories.

Let's Get Down to BRASS TACKS



AN OPEN FORUM OF CONTROVERSIAL OPINION

Quarterly Wanted

Dear Editor:

The increase of pages to 160 makes *Astounding Stories* one of the finest values on the market. This move proves, to me at least, that A. S. is honestly sincere in trying to give the readers a square deal.

How about making science-fiction even more enjoyable? Put out a quarterly, for instance, that actually comes out four times a year. See what other readers think of the quarterly idea.

The four best stories this issue were, in order: *Rebirth*, *Man Who Stopped The Dust*, *Retreat From Utopia*, and *The Time Imposter*.

Born Of The Sun was too drawn out, very poor, especially by Williamson.—Louis Robert Adessa, 18710 Wyoming Avenue, Hollis, N. Y.

We'll Try

Dear Editor:

The increase in the number of pages is a pleasant surprise. I am glad that *Astounding* is doing well enough to warrant the change.

The March issue is a dandy. *Rebirth* is the best in the issue, but I thought it ended rather abruptly. It would have made a fine book-length novel.

The Man Who Stopped The Dust, and *Born Of The Sun* are aptly termed thought-variant stories.

Please try to get Otis A. Kline and Edward E. Smith to write for you.—Jack Darrow, 4224 N. Sawyer Avenue, Chicago, Ill.

And Thousands Don't Want Reprints!

Dear Editor:

Thought-variant stories! They are strangely different. *Born Of The Sun* was the greatest yet. Let's have more of such tales.

Henry J. Kostkos' *Black Death* was only fair, and the poorest in the March issue. Kostkos does not measure up to Wandrei, Coblenz, Schachner, Williamson and Leinster—masters of science-fiction.

160 pages—great!

So far, Mr. Editor, you have been open-minded. What I am going to ask you now, though, will no doubt make you say, as all other editors before you have said: "No, I will not!" It's—please reprint *The Blind Spot*. Thousands of fans beg you to reprint it. Please do.—Earl Perry, Box 265, Rockdale, Texas.

"Tripe"—with a Smile

Dear Editor:

Please accept this letter as a word of protest against the weak-minded arm-chair pseudo-science that is coming more and more to pervade your magazine. This letter would not have been written if I had not noticed in your Brass Tacks forum of March six letters which actually lauded the alleged super-science marvel of the month, namely, *Colossus*. I remember reading several months ago in some "Reader Speaks" forum or other a letter in which, quite excusably, the writer mentioned the effect of velocity on the dimensions of the moving object. This effect is known in reputable scientific circles as the Lorenz-Fitzgerald contraction. This theory and its mathematical expression was necessitated by the failure of the Michelson-Morley ether-drift experiment. But that is another story. However, the fact remains that the writer of whom I spoke had the situation reversed, calling contraction elongation. Since the time I read that letter, I have noticed other letters from persons suffering from the same delusion. And now what do we have? A feature story whose basis is the same error. And people applaud it and call it great stuff. I'd call it just tripe, but consider it said with a smile on my face.

I realize that it is not easy to get a good, juicy, gripping science-fiction story without a little stretching of the fancy. But if you are going to call the stories science-fiction, please at least put a little science in. Sort of a lubricant, if you get what I mean.

Please appreciate the fact that I am offering constructive criticism. I like your magazine (when the stories are good). I believe you have many good authors, such as Jack Williamson, Stanton Coblenz and Nat Schachner, who present ideas in a way which does not insult your intelligence. Your magazine, I think, has a profound effect on people who have something to think with and do so. That is providing your stories are worth thinking about, and they are for the most part.—J. R. Alburger, Swarthmore College, Pennsylvania.

Mr. Wandrei's Reply

Dear Editor:

Mr. Alburger's letter, which you have referred to me for an answer, is curious for its fantastic and irrational thinking.

I have no quarrel with his failure to enjoy *Colossus*. If he did not like it, he is perfectly welcome to think so, and to say so. What mystifies me is his attack on the theories I used—solely because they differed from a theory he prefers! The Lorenz-Fitzgerald contraction is only a hypothesis invented to explain, as Mr. Alburger says, certain phenomena not covered by the Michelson-Morley ether-drift. There is not a shred of absolute, unquestionable, incontrovertible proof that the Lorenz-Fitzgerald theory is final and complete truth. I have no doubt that as science progresses, a basic hypothesis to explain all phenomena of velocity, direction, and relation will be evolved. I suspect that had I written a story some years ago and propounded the Lorenz-Fitzgerald contraction theory, Mr. Alburger would have raised passionate objection because I did not adhere to the Michelson-Morley theory; and I suppose that if the Lorenz-Fitzgerald theory is ever abandoned for a better one, Mr. Alburger will be just as insistent that writers cling to the new theory. There is a deeper question involved; whether readers want to be stimulated with new ideas, new conceptions, suggestions of scientific wonders and marvels to come; or whether, like Mr. Alburger, they wish to be limited to such scientific theories as are now held and generally accepted. So far as I can see, science-fiction would be devitalized if such limitations were placed upon it. Nor can I see any point in criticizing a story for presenting a theory that conflicts with a widely believed but unproved theory. I am afraid that what motivates Mr. Alburger is not science, but dogmatism; and not imagination, but actualism. The real scientist and the intelligent observer uses hypotheses and facts as stepping-stones toward additional facts and hypotheses until knowledge arrives at an unshakable truth. Mr. Alburger appears to prefer the precarious and dubious position of those who try to make fact conform with prevailing theory.—Donald Wandrei.

More Brass Tacks

Dear Editor:

Allow me to congratulate you on the March issue of *Astounding*. Truly, it is the best issue yet. Believe me, there's no better magazine of this kind on the market, barring none! This issue puts it right up at the top of the list.

Brown's cover is nice. The conclusion of *Rebirth* was a fitting conclusion to a great story.

Williamson's story is the best complete story in this issue, in my humble opinion, with Fearn's story a close second, and may I add that Schachner is one of the best authors that you've had as yet.

Just one more little suggestion. Please, if it's possible, put a couple more pages in Brass Tacks.

Am glad to see another story by Williamson for next month, and am I anxious to see what kind of pen Harry Bates can wield!—Olon F. Wiggins, 2418 Stout Street, Denver, Colo.

Answers Coming

Dear Editor:

I, like Charles Sankovich, whose letter you published in this month's *Astounding*, am only fifteen years old, and I, also, am capable of throwing a few brickbats. For instance, in *The Man Who Never Lived*, if he never lived how could he tell the story? *Black Death*—a good story, but how did the doctor make his brain small enough to travel in the bloodstream of a person?

Couldn't it be arranged so that all of the advertisements are put in the back? Why not have smooth edges?

I wish you would answer the letters you publish in Brass Tacks.

Why not have at least one interplanetary story in each issue?—Norman H. Borden, 32 College Avenue, Swarthmore, Penna.

It Is!

Dear Editor:

In my opinion the March *Astounding* is easily the best yet. Your editorial policy must be one of constant improvement because this issue certainly constitutes a decided change for the better. You've increased the number of pages up to 160 and given us eight stories which I claim is a real generous allotment of science-fiction for only twenty cents.

The stories were every one of them good, with the possible exception of *The Retreat From Utopia*. Tell Wallace West to go back to his western stories.

If I were asked to pick the best story of the issue, I think I'd choose *Black*

Death by Henry Kostkos, mainly on account of the nifty surprise ending he sprung on the readers. I thought it a very clever story.

I enjoyed *Born Of The Sun*, the thought-variant for this month. I got a kick out of Williamson's description of the monster emerging from the earth like a chick would from its shell. He knows all there is to know about the art of description.

The Man Who Stopped The Dust was noteworthy for its concept of what a dustless world would be like.

I think you could improve the magazine's looks if you cut the edges even and trimmed the cover down so that it wouldn't overlap the inside pages.

Yours for a better-looking *Astounding*.—Robert Tufts, 61 Rathbun Avenue, White Plains, N. Y.

Rebirth the Best

Dear Editor:

This is my first letter to you and all I want to say is, that *Rebirth* by Thomas C. McClary is the best story I've ever read.—Kay Benton, 2636 Sheridan Drive, Norwood, Ohio.

We Shall

Dear Editor:

I am one of the veteran readers of *Astounding*. I was glad to see it revived by a strong publication concern. Keep up your policy of broad-mindedness and *Astounding* will forge ahead.

Charles Willard Diffin is my favorite author with Harl Vincent a close second. I have yet to find a story I did not like in our magazine.

Here's hoping Brass Tacks grows bigger.—Michael Racano, 51 Brookwood Street, East Orange, N. J.

No More Cigarettes?

Dear Editor:

The illustration on the cover of the February issue was excellent. I like the contrast of the four major colors in it.

The stories were also fine, but I think some of your authors and artists don't stop to reason things out. For instance, in Vincent's *Lost City Of Mars*, Kal Turjen, the Martian, is always reaching for a cigarette. I think that by the 22nd century, people will have banished cigarettes because of their effect on health.

Also, the illustration for *Space Flot-sam* showed rocket vapors drifting lazily

upward from the tubes of "Torool." The reason gases or vapors rise is because they are lighter than air. Since there is no air in space, the vapors would trail out behind the ship.

But that didn't keep me from enjoying the stories!—Otto Steinhardt, Belvidere, New Jersey.

How About It?

Dear Editor:

I have been reading *Astounding Stories* for two or three years now, and I have never found anything to complain about. However, there is something on the cover of the January issue that I wish to inquire about.

In the story, *Colossus*, Donald Wandrei says that Duane's ship is going faster than light. If the cover is based on the story, then the two stars or planets are not painted correctly. Each second that Duane goes forward in time, he is progressing backward in light. In other words, he is catching up on pictures of things that happened before. If this is so then the two objects in the picture should be moving with the ship because he is seeing them where they were. In the picture it seems he is going in the direction they are coming from. This means that as he moves forward he gets the picture of the object which it was a second ago.

If this hypothesis is wrong, I would like to see where. I am hoping this letter will be printed in the Brass Tacks forum.—Laurence Rothstein, 2604 University Avenue, Bronx, New York.

"A Long Groan"

Dear Editor:

Did some reader declare that the new *Astounding Stories* has actually eclipsed the old one? A truer sentence was never spoken! *Astounding* is, at this moment, the most formidable enemy ever arrayed against the other science-fiction magazines.

The thought-variant idea certainly went a long way in accomplishing this. It most likely brought a long groan from your rivals. The idea is original, refreshing, and thoroughly entertaining.

Besides the thought-variant stories, I've found all the other stories of high merit.

In the February number: The novellettes were both excellent. *Lost City Of Mars* and *The Living Flame* written by

two very good authors. I thoroughly enjoyed both.

The four short stories were all just-the-way-you-want-them. All good. *Short Wave Castle*, one of the most entertaining; *Space Flotsam*, the kind you like to read, but rarely see; *Scandal In The 4th Dimension*, amusing and interesting; *Blind Reasoning*, held my suspense till the last word, and I wasn't disappointed.

I am anxiously awaiting the conclusion of *Rebirth*, for I never read a story until all the parts are in my possession. It certainly looks good, by the comments and illustrations.—Raymond Peel Mariella, 5873 Woodcrest Avenue, Philadelphia, Penna.

A Plea for Strange Tales

Dear Editor:

Rebirth is the best story I have read in a long, long time. Come to think of it, the March issue is the best issue you have yet published. And 160 pages, too! "The best for less," eh?

Colossus was the best story in the January issue. All the rest were good.

I am glad to see *Astounding* back on the news stands, but why not revive *Strange Tales*? It was a good magazine.—J. H. Hennigar, East Tawas, Michigan.

Thanks

Dear Editor:

I am not an old reader of *Astounding*, but find it living up to its name. Every story in the March issue was good. Let me name them in order of merit. *Rebirth*, *Born Of The Sun*, *The Man Who Stopped The Dust*, *Black Death*, *The Man Who Never Lived*, *The Time Imposter*, *The Retreat From Utopia* and *Manna From Mars*.

Rebirth was superb.

My sincere hopes for the continued success of *Astounding*.—Robert Lyman, Box 802, Akron, Ohio.

We Hope It Won't

Dear Editor:

I spent four enjoyable evenings reading the March issue of *Astounding*. It was the third one I read, but it won't be the last.

Here, in order, are the stories which appealed to me. *The Man Who Stopped The Dust*, *Born Of The Sun*, *Rebirth*, *The Retreat From Utopia*, *The Time Imposter*, *The Man Who Never Lived*, *Manna From Mars*, *Black Death*.

Can you continue the "Hawk Carse" series? Almost everybody enjoyed them. Why don't you enlarge Brass Tacks? I don't think the magazine could get along without it.—John Eremans, 315 West Fifth Street, Mt. Carmel, Penna.

How About Characters in Rebirth?

Dear Editor:

Understand now, this criticism is in the friendliest spirit. Yes, I like the type of fiction you print, but I have two big complaints on which I am sure many of your readers will agree with me.

Science-fiction, as such, is supposed to portray the unusual, the unique, the unconventional, but so far, the social sciences have been sadly neglected. Characters are stereotyped; there aren't two authors writing to-day who make real characters. Come now, is there any single character in your stories who stands out so that you remember him before you remember the story? I'm afraid we will all have to admit there isn't.

Those seem to be the only two weaknesses of any importance. Plots? Getting bigger and better all the time. Descriptions, scenes, settings? Why, we have more variety and more unusual ideas along these lines than the entire world of fiction had before. There is absolutely no limit to our range in this direction. But nowhere will you discover a hero who is anything but a hero, usually a little lacking in common sense; a villain who is not 100%, simon-pure, run-of-the-mine villain; a heroine who is anything but sweet, pure and good.

Now, what is the trouble? Can't we write characters who live? Are we all too narrow-minded to allow a little humanity and weakness in our heroes, a little feminine sinfulness and consequent interest in our heroines? We can understand advances in science and art, but are blind to any advances in human relations, a subject too undeveloped to be classed as a science yet.

Even I, a mere hammerer of brass (radio operator to you), can see that we lack something in character portrayal and the incidental dialogue, and I would even like to see a few stories on future moral developments, changing relations between the sexes, psychology in the future, etc., now and then.

Getting back to Astounding. I think it is developing into the best of its type also with so many good authors contributing. The thought-variant idea is

a good one. I notice that the science in most of the stories is woefully thin, but the adventures of the hero and his stooge are played up much after the manner of the flaming western magazines.

I hope this letter will get printed even though it be more or less of a brickbat, because it will be interesting to get the reaction of other readers to my criticisms.—L. J. Stanton, U. S. S. *Medusa*, San Pedro, Calif.

The Test

Dear Editor:

When conversing with various science-fiction fans of this locality, the discussion often became rather heated over the true meaning or definition of science-fiction. While reading the story, *The Machine That Knew Too Much*, all pieces of this puzzle seemed suddenly to fit together. A. T. Locke's story is of the type which makes us say to ourselves: "Say, why can't we make such a thing? With a little experimenting in the good old home lab oughtn't we get the right dope?" So, what do we do? First, we look through our own books and notes, then we go to this or that library and we look through all the reference books we can grab. Then we feverishly mix chemicals, manipulate wires and push switches until a great light begins to penetrate our skulls. We realize that the darn thing cannot be done either with our meager means or with any one else's for that matter. So we just sigh and say that we'll keep the idea in mind and maybe some day, if we can't, some one else will.

Now, all that a story has to do is to make me want to duplicate at least one of the ideas brought forth in it. If the story's original, if it's so realistic and plausible as to send me skooting down to the lab, or if present facts seem to indicate that the incidents of the story could be a logical outgrowth of present conditions, then, it sure is science-fiction.

I would like to apologize for not replying promptly to all the nice letters I received as a result of my first epistle to Brass Tacks and also to announce that I have recently been appointed Divisional Head of New York for the Cosmos Science Club. All local fans interested in joining are cordially requested to get in touch with me right away, personally or by mail.—William S. Sykora, 31-51 41st St., Long Island City, N. Y.



GEE...I'd sure like to have real **HE-MAN** muscles!

So would I, but it takes a long while

"Bunk!"

—says

CHARLES ATLAS

"I'll Prove in the first 7 days YOU can have a Body like Mine!"

[No other Physical Instructor in the World has ever DARED to make the offer he makes in this announcement.]

DON'T get the idea that it takes a lot of time and hard work for you to get smashing strength and powerful muscular development! And don't fool yourself into thinking that you need dumb-bells, stretchers or any other such contraptions!

Both these ideas are all bunk—and I have PROVED it. All I need is 7 days to prove what I can do for you! And I don't need any apparatus either. In fact, I have so sympathy with apparatus at all—don't believe in it. It is artificial—and it may strain your heart or other vital organs for life!

NATURAL Methods Are All I Need

Oa this page you will see an actual photo of how I look today. This picture has not been changed in any way. No muscles have been "painted on." This photograph is the camera's honest proof of what I have done for MY body. I myself am ready to prove what my secret of Dynamic Tension can do for YOURS!

To look at me now you wouldn't recognize me as the same man I was a few years ago. Then I was a physical wreck, a 97-pound wankling—flat chested, spindly legs, arms and legs like pipstems.

I was worried—and I had a right to be. I decided to study

myself, to do something about my body. Then I made a discovery. I found a new way to build myself up. A way that was simple, natural, quick and sure! "Dynamic Tension" is what I called it. I put this secret to work. And in a short time I had the kind of body you see here—the body which has twice won the title of "The World's Most Perfectly Developed Man."

This Secret Has Helped Thousands

Thousands of other fellows now know this secret, too—and know from their own personal experience what Dynamic Tension has done for them. When they turned to me for advice, they were just as frail and puny as I once was. Now they are life-sized examples of what a man can and ought to be—with mighty energy, tireless endurance, and muscles that stand out like bridge-cables all over their bodies.

I have written an interesting booklet, filled with pictures, which tells my story—and theirs. I would like to send you a copy of it entirely free.

FREE BOOK

Gamble a stamp today. Mail coupon for free copy of my new book, "Everlasting Health and Strength." It shows you from actual photos how I have developed my puny to my own perfectly balanced proportions. Where I send your copy. Write your name and address plainly on the coupon. Mail it today to me personally.



Let Me Send You My Free Book

I'd like you to know what Dynamic Tension has done for me—what it has done for others—and what it can do for you! This little coupon will bring you my free book, which tells all about it. There is no cost or obligation of any kind—and no one will call upon you. I just want to put into your hands proof that I can do for you what I have done for so many thousands of others: give you broad, powerful shoulders, a chest which bulges with smashing strength, a chest which stands out solid, and muscular, and an evenly developed body that will make others look like dwarfs next to you.

Will you gamble a stamp to win a



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Holder of the title "The World's Most Perfectly Developed Man" won an open competition in the only national and international contest held during the past 15 years.

body like mine? Then mail this coupon TODAY! CHARLES ATLAS, Dept. 38-D, 133 East 23rd St., N. Y. C.

CHARLES ATLAS, Dept. 38-D

133 East 23rd Street, New York City

"I want the proof that your system of Dynamic Tension will make a New Man of me—give me a healthy, husky body and big muscle development. Send me your free book, "Everlasting Health and Strength."

Name (Please print or write plainly)

Address

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May, 1934

ASTOUNDING STORIES

20c



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NOT the top leaves—they're under-developed—they are harsh!

The Cream of the Crop

NOT the bottom leaves—they're inferior in quality—coarse and always sandy!



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Would YOU, TOO, Like to

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\$2,500
or Buick Sedan and \$1,000



Now Hundreds More Prizes Being Given
ANYBODY MAY WIN

This is our sensational new way to advertise—giving away big cash prizes—besides thousands in EXTRA cash rewards. Not a cent of your money needed now or ever to win \$2,500.

Can YOU Find 4 Dogs in Picture Above?

Tell me quick! Some are upside down. Some look straight at you. Hundreds have won big cash rewards in other campaigns conducted by men in this firm. Here are a few. Mrs. Kate Needham, a housewife in Oregon won \$4,705. Ira Burroughs, past 70 years old in a little Texas town won \$2,170. Anna Jacobson in a small New York town won over \$5,000. Sister M. Crocencia in Arkansas won \$1,490. Now comes your chance. You are GUARANTEED to win a cash reward if you take an active part. Not a lottery. No luck needed. Hurry—get started quick by finding 4 dogs. Not a cent of your money needed to buy anything. Big cash rewards are being won every day. In addition to giving Buick I will pay

\$1,000⁰⁰ EXTRA
for Promptness

to First Prize winner. Not only one person, but hundreds will be rewarded. In case of ties, duplicate prizes will be given. All the money to pay prizes is in the Bankers Trust Co. at Des Moines. I invite you to look us up through any bank in Des Moines, any credit agency, business house, magazine, newspaper, railroad.
\$10,000⁰⁰ REWARD will be paid to any worthy charity if anyone can prove that we do not really give away all these thousands of dollars in cash prizes—or that all this prize money is not on deposit in the bank.

WRITE QUICK

Send no money. Mark dogs found, clip picture, mail quick—or write on penny post-card how many dogs you find. For replying I will tell you how you may also win big EXTRA cash rewards and \$2,500 too. Answer NOW! Tell me which you would prefer to win—\$2,500 all cash or Buick and \$1,000.

Merrioid Johnson, Mgr. Dept. 41, Des Moines, Iowa.

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